UNITED STATES
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 002-09048

THE BANK OF NOVA SCOTIA

(Exact name of Registrant as specified in its charter)

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))

44 King St. West, Scotia Plaza, 8 th floor,
Toronto, Ontario, Canada M5H 1H1
(416) 866-3672
(Address and telephone number of Registrant's principal executive offices)

The Bank of Nova Scotia, 250 Vesey Street,
New York, N.Y., U.S.A. 10281
Attention: Hector Becil
(212) 225-5000
(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	New York Stock Exchange

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

Not applicable
(Title of Class)

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

Not applicable
(Title of Class)

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	1,227,027,624
Preferred Shares, Series 22	9,376,944
Preferred Shares, Series 23	2,623,056
Preferred Shares, Series 30	6,142,738
Preferred Shares, Series 31	4,457,262
Preferred Shares, Series 32	11,161,422
Preferred Shares, Series 33	5,184,345
Preferred Shares, Series 34 (Non-Viability Contingent Capital)	14,000,000
Preferred Shares, Series 36 (Non-Viability Contingent Capital)	20,000,000
Preferred Shares, Series 38 (Non-Viability Contingent Capital)	20,000,000
Preferred Shares, Series 40 (Non-Viability Contingent Capital)	12,000,000

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.

DISCLOSURE CONTROLS AND PROCEDURES

Management's responsibility for financial information contained in the Annual Report is described on page 140 of Exhibit 99.3, 2018 Consolidated Financial Statements. In addition, the Bank's Audit and Conduct Review Committee of the Board of Directors has reviewed, and the Board of Directors has reviewed and approved, the 2018 Consolidated Financial Statements and Management's Discussion and Analysis prior to release. Scotiabank is committed to providing timely, accurate and balanced disclosure of all material information and to providing fair and equal access to such information. The Bank's disclosure policies and practices are published on its website.

Disclosure Controls and Procedures

The Bank's disclosure controls and procedures are designed to provide reasonable assurance that information is accumulated and communicated to the Bank's management, including the Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO"), as appropriate, to allow timely decisions regarding required disclosure.

As of October 31, 2018, the Bank's management, with the participation of the CEO and CFO, evaluated the effectiveness of its disclosure controls and procedures, as defined under the rules adopted by the United States Securities and Exchange Commission ("SEC") and the Canadian securities regulatory authorities, and have concluded that the Bank's disclosure controls and procedures are effective.

Internal control over financial reporting

Management of the Bank is responsible for establishing and maintaining adequate internal control over financial reporting. These controls include 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 Bank; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board, and that receipts and expenditures are being made only in accordance with authorizations of management and directors of the Bank; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Bank's assets that could have a material effect on the financial statements.

All control systems contain inherent limitations, no matter how well designed. As a result, the Bank's management acknowledges that its internal control over financial reporting will not prevent or detect all misstatements due to error or fraud. In addition, management's evaluation of controls can provide only reasonable, not absolute, assurance that all control issues that may result in material misstatements, if any, have been detected.

Management assessed the effectiveness of internal control over financial reporting, using the Committee of Sponsoring Organizations of the Treadway Commission (COSO) 2013 framework, and based on that assessment concluded that internal control over financial reporting was effective as of October 31, 2018.

Changes in internal control over financial reporting

There have been no changes in the Bank's internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, the Bank's internal control over financial reporting during the year ended October 31, 2018. The Bank adopted IFRS 9, *Financial Instruments* effective November 1, 2017 and as a result, has updated and modified certain internal controls over financial reporting. Refer to Note 3 of the consolidated financial statements for further information on changes to accounting policies and Note 4 regarding the transition impact on adoption of IFRS 9.

MANAGEMENT'S INTERNAL CONTROL OVER FINANCIAL REPORTING

Management's Report on Internal Control over Financial Reporting and the Report of Independent Registered Public Accounting Firm are provided in Exhibit 99.4.

AUDIT COMMITTEE FINANCIAL EXPERT

All of the members of the Bank's Audit and Conduct Review Committee of the Board of Directors ("audit committee") are financially literate and independent, and one or more members of the audit committee meet the definition of a financial expert. The Bank's Board of Directors has determined that Thomas C. O'Neill, Una M. Power, L. Scott Thomson and Benita M. Warmbold are audit committee financial experts and are independent, as that term is defined by the New York Stock Exchange's corporate governance standards applicable to the Bank.

The SEC has indicated that the designation of a person as an audit committee financial expert does not impose on such person any duties, obligations or liability that are greater than the duties, obligations and liability imposed on such person as a member of the audit committee and board of directors in the absence of such designation.

CODE OF ETHICS

The Bank has adopted a code of ethics, entitled "Scotiabank Code of Conduct" (the "Code of Conduct"). The Code of Conduct has been in place for many years and applies to all directors, officers and employees of the Bank. A copy of the Code of Conduct was most recently filed as an exhibit to Form 6-K filed with the SEC (EDGAR Company Filings) on November 27, 2018. The Code of Conduct is also available on the Bank's website at www.scotiabank.com, in the Corporate Governance section, and is available in print to any person, without charge, upon written request to the Secretary of the Bank at the Toronto executive office address shown above. A supplement to the Code of Conduct, the Whistleblower Policy and Procedures, is also posted on the Bank's website. Amendments to the Code of Conduct and waivers, if any, for directors and executive officers will be disclosed on the Bank's website. There were no such waivers under the Code of Conduct granted in fiscal 2018.

PRINCIPAL ACCOUNTANT FEES AND SERVICES

The disclosure provided in Table 76 "Fees paid to the shareholders' auditors" on page 128 of Exhibit 99.2, Management's Discussion and Analysis, is incorporated by reference herein. The nature of these services is as follows:

- Audit services generally relate to the statutory audits and review of financial statements, regulatory required attestation reports, as well as services associated with registration statements, prospectuses, periodic reports and other documents filed with securities regulatory bodies or other documents issued in connection with securities offerings.
- Audit-related services include special attest services not directly linked to the financial statements, review of controls and procedures related to regulatory reporting, audits of employee benefit plans and consultation and training on accounting and financial reporting.
- Tax services outside of the audit scope relate primarily to specified review procedures required by local tax authorities, attestation on tax returns of certain subsidiaries as required by local tax authorities, and review to determine compliance with an agreement with the tax authorities.
- Other non-audit services are primarily for the review and translation of English language financial statements into other languages and other services.

None of the above services were approved pursuant to an exemption under paragraph (c)(7)(i)(C) of Rule 2-01 of Regulation S-X from the requirement that the audit committee pre-approve the services. The majority of the hours expended on the audits of the 2018 and 2017 consolidated financial statements were attributable to work performed by the full-time permanent employees of the Bank's independent auditors, KPMG LLP or its affiliates. The audit committee's pre-approval policies and procedures, as revised effective March 5, 2007, were attached as Exhibit 7 to

the Form 40-F filed on December 19, 2007 for the fiscal year ended October 31, 2007. The pre-approval policies and procedures have been subsequently approved without any major changes at each annual review.

OFF-BALANCE SHEET ARRANGEMENTS

The disclosure provided under "Off-balance Sheet Arrangements" on pages 67 to 69 and "Structured entities" on pages 68 to 69 of Exhibit 99.2, Management's Discussion and Analysis, is incorporated by reference herein. Additional information from note 3 on pages 149 to 165, note 7 on pages 169 to 175, note 10 on pages 178 to 185, note 14 on pages 197 to 198, note 15 on pages 198 to 200, note 23 on page 205, note 24 on pages 205 to 209, note 36 on pages 226 to 227 and note 37 on pages 228 to 235 of Exhibit 99.3, 2018 Consolidated Financial Statements, is incorporated by reference into "Off-balance Sheet Arrangements" in Management's Discussion and Analysis.

CONTRACTUAL OBLIGATIONS

The disclosure provided under "Contractual maturities and obligations" on pages 103 to 105 of Exhibit 99.2, Management's Discussion and Analysis, is incorporated by reference herein. Additional information from note 7 on pages 169 to 175, note 20 on page 204, note 28 on pages 214 to 218, note 36 on pages 226 to 227 and note 37 on pages 228 to 235 of Exhibit 99.3, 2018 Consolidated Financial Statements, is incorporated by reference into "Contractual Obligations" in Management's Discussion and Analysis.

IDENTIFICATION OF THE AUDIT COMMITTEE

The Bank's audit committee is composed of the following directors: Una M. Power (Chair and financial expert), Scott B. Bonham, Charles H. Dallara, Tiff Macklem, Thomas C. O'Neill (financial expert), Michael D. Penner, L. Scott Thomson (financial expert) and Benita Warmbold (financial expert).

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.scotiabank.com/corporategovernance.

DISCLOSURE PURSUANT TO SECTION 13(r) OF THE EXCHANGE ACT

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 related to both the Islamic Republic of Iran ("Iran") and certain persons listed on the Specially Designated National and Blocked Persons list maintained by the United States Department of Treasury Office of Foreign Assets Control, during the year ended October 31, 2018. Disclosure of these certain activities, transactions or dealings is generally required even if conducted in compliance with applicable law and regulations. The Bank is not aware that it or any of its affiliates have knowingly engaged in any transaction or dealing reportable under section 13(r) of the Exchange Act during the year ended October 31, 2018.

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 registered pursuant to Form 40-F; 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: **THE BANK OF NOVA SCOTIA**

By: /s/ Rajagopal Viswanathan
Name: Rajagopal Viswanathan
Title: Executive Vice-President and Chief Financial Officer

Date: November 27, 2018

EXHIBIT INDEX

Exhibit No.	Description
99.1	Annual Information Form dated November 27, 2018
99.2	Management's Discussion and Analysis (pages 16 through 137 of the 2018 Annual Report)
99.3	2018 Consolidated Financial Statements (pages 139 through 236 of the 2018 Annual Report)
99.4	Management's Report on Internal Control over Financial Reporting and Report of Independent Registered Public Accounting Firm (page 138 of the 2018 Annual Report)
99.5	Corporate Governance
99.6	Consent of Independent Registered Public Accounting Firm
99.7	Certifications required by Rule 13a-14(a) or Rule 15d-14(a), pursuant to Section 302 of the U.S. Sarbanes-Oxley Act of 2002
99.8	Certifications required by Rule 13a-14(b) or Rule 15d-14(b) and 18 U.S.C. Section 1350, as enacted pursuant to Section 906 of the U.S. Sarbanes-Oxley Act of 2002
101	Interactive Data File

Exhibit 99.1

The Bank of Nova Scotia

ANNUAL
INFORMATION
FORM

NOVEMBER 27, 2018



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INFORMATION IS AT OCTOBER 31, 2018, UNLESS OTHERWISE NOTED.

Distribution Notice

When this Annual Information Form is provided to security holders or other interested parties, it must be accompanied by copies of all the documents (or excerpts thereof) incorporated herein by reference. Portions of this Annual Information Form of The Bank of Nova Scotia (the "Bank", "Scotiabank", "we" or "our") dated November 27, 2018 (the "AIF"), are disclosed in the Management's Discussion and Analysis for the year ended October 31, 2018 (the "MD&A"). The MD&A is also available on SEDAR at www.sedar.com.

Financial Data

Except as otherwise noted, all information is given at or for the year ended October 31, 2018. Amounts are expressed in Canadian dollars. Financial information is presented in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board, unless otherwise noted.

Forward-looking Statements

From time to time, our public communications often include oral or written 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 ("SEC"), or in other communications. In addition, representatives of the Bank may include forward-looking statements orally to analysts, investors, the media and others. All such statements are made pursuant to the "safe harbor" provisions of the U.S. Private Securities Litigation Reform Act of 1995 and any applicable Canadian securities legislation. Forward-looking statements may include, but are not limited to, statements made in this document, the Management's Discussion and Analysis in the Bank's 2018 Annual Report under the headings "Outlook" and in other statements regarding the Bank's objectives, strategies to achieve those objectives, the regulatory environment in which the Bank operates, anticipated financial results, and the outlook for the Bank's businesses and for the Canadian, U.S. and global economies. Such statements are typically identified by words or phrases such as "believe," "expect," "foresee," "forecast," "anticipate," "intend," "estimate," "plan," "goal," "project," and similar expressions of future or conditional verbs, such as "will," "may," "should," "would" and "could."

By their very nature, forward-looking statements require us to make assumptions and are subject to inherent risks and uncertainties, which give rise to the possibility that our predictions, forecasts, projections, expectations or conclusions will not prove to be accurate, that our assumptions may not be correct and that our financial performance objectives, vision and strategic goals will not be achieved.

We caution readers not to place undue reliance on these statements as a number of risk factors, many of which are beyond our control and effects of which can be difficult to predict, could cause our actual results to differ materially from the expectations, targets, estimates or intentions expressed in such 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; changes in currency and interest rates; increased funding costs and market volatility due to market illiquidity and competition for funding; the failure of third parties to comply with their obligations to the Bank and its affiliates; changes in monetary, fiscal, or economic policy and tax legislation and interpretation; changes in laws and regulations or in supervisory expectations or requirements, including capital, interest rate and liquidity requirements and guidance, and the effect of such changes on funding costs; changes to our credit ratings; operational and infrastructure risks; reputational risks; the accuracy and completeness of information the Bank receives on customers and counterparties; the timely development and introduction of new products and services; our ability to execute our strategic plans, including the successful completion of acquisitions and dispositions, including obtaining regulatory approvals; critical accounting estimates and the effect of changes to accounting standards, rules and interpretations on these estimates; global capital markets activity; the Bank's ability to attract, develop and retain key executives; the evolution of various types of fraud or other criminal behaviour to which the Bank is exposed; disruptions in or attacks (including cyber-attacks) on the Bank's information technology, internet, network access, or other voice or data communications systems or services; increased competition in the geographic and in business areas in which we operate, including through internet and mobile banking and non-traditional competitors; exposure related to significant litigation and regulatory matters; the occurrence of natural and unnatural catastrophic events and claims resulting from such events; and the Bank's anticipation of and success in managing the risks implied by the foregoing. A substantial amount of the Bank's business involves making loans or otherwise committing resources to specific companies, industries or countries. Unforeseen events affecting such borrowers, industries or countries could have a material adverse effect on the Bank's

financial results, businesses, financial condition or liquidity. These and other factors may cause the Bank's actual performance to differ materially from that contemplated by forward-looking statements. The Bank cautions that the preceding list is not exhaustive of all possible risk factors and other factors could also adversely affect the Bank's results, for more information, please see the "Risk Management" section of the Bank's 2018 Annual Report, as may be updated by quarterly reports.

Material economic assumptions underlying the forward-looking statements contained in this document are set out in the 2018 Annual Report under the headings "Outlook", as updated by quarterly reports. The "Outlook" sections are based on the Bank's views and the actual outcome is uncertain. Readers should consider the above-noted factors when reviewing these sections. When relying on forward-looking statements to make decisions with respect to the Bank and its securities, investors and others should carefully consider the preceding factors, other uncertainties and potential events.

Any forward-looking statements contained in this document represent the views of management only as of the date hereof and are presented for the purpose of assisting the Bank's shareholders and analysts in understanding the Bank's financial position, objectives and priorities, and anticipated financial performance as at and for the periods ended on the dates presented, and may not be appropriate for other purposes. Except as required by law, the Bank does not undertake to update any forward-looking statements, whether written or oral, that may be made from time to time by or on its behalf.

Additional information relating to the Bank can be located on the SEDAR website at www.sedar.com and on the EDGAR section of the SEC's website at www.sec.gov.

CORPORATE STRUCTURE

Name, Address and Place of Incorporation

The Bank was granted a charter under the laws of the Province of Nova Scotia in 1832 and commenced operations in Halifax, Nova Scotia in that year. Since 1871, the Bank has been a chartered bank under the *Bank Act* (Canada) (the "Bank Act"). The Bank is a Schedule I bank under the Bank Act and the Bank Act is its charter. The head office of the Bank is located at 1709 Hollis Street, Halifax, Nova Scotia, B3J 1W1 and its' executive offices are at Scotia Plaza, 44 King Street West, Toronto, Ontario, M5H 1H1. A copy of the Bank's by-laws is available on www.sedar.com.

Intercorporate Relationships

Each international principal subsidiary of the Bank is incorporated or established and existing under the laws of the jurisdiction in which its principal office is located, with the exceptions of Scotia Holdings (US) Inc. and Scotiabanc Inc., which are incorporated and existing under the laws of the State of Delaware. Each Canadian principal subsidiary of the Bank is incorporated or established and existing under the laws of Canada, with the exception of: 1832 Asset Management L.P., Scotia Capital Inc. and Scotia Securities Inc. which are incorporated or established and existing under the laws of the Province of Ontario.

The Bank's principal subsidiaries are listed on Schedule A.

GENERAL DEVELOPMENT OF THE BANK'S BUSINESS

Three-Year History

As reported in accordance with IFRS, for the fiscal year ended October 31, 2018, the Bank's net income attributable to common shareholders was $8,361 million, up from $7,876 million in 2017. The Bank's net income attributable to common shareholders was $6,987 million in 2016. Earnings per share (on a diluted basis) for the fiscal year ended October 31, 2018 was $6.82, compared to $6.49 in 2017 and $5.77 in 2016. The 2016 results included a restructuring charge of $378 million (pre-tax) that had a $0.23 impact on diluted earnings per share.

Return on equity for the fiscal year ended October 31, 2018 was 14.5%, compared to 14.6% in 2017 and 13.8% in 2016. In fiscal 2018, the Bank's actual dividend payout ratio was 47.7% compared to 46.6% in 2017 and 49.6% in 2016.

On October 3, 2018, the Bank completed the acquisition of MD Financial Management Inc. ("MD") from the Canadian Medical Association ("CMA"), for approximately $2.6 billion. MD is Canada's leading provider of financial services to physicians

and their families, with more than $49 billion in assets under management and administration. The Bank and the CMA have entered into a 10-year affinity agreement under which the Bank will commit to pay $115 million over the next 10 years to support the advancement of the medical profession and health care in Canada. MD forms part of the Canadian Banking business segment.

On August 14, 2018, the Bank announced that it reached an agreement to acquire Banco Dominicano del Progreso ("Progreso"), a bank with operations in the Dominican Republic. The transaction is not financially material to Scotiabank. Progreso forms part of the International Banking business segment. Subject to regulatory approvals and closing conditions the acquisition is expected to close in fiscal Q1 2019.

On July 6, 2018, the Bank completed the acquisition of 68.2% of Banco Bilbao Vizcaya Argentaria, Chile ("BBVA Chile") for approximately US$2.2 billion. The Bank consolidated 100% of BBVA Chile's assets and liabilities and recorded a non-controlling interest of 31.8%. The Bank subsequently merged the operations of BBVA Chile into Scotiabank Chile and reached an agreement with the minority shareholder to remain invested in the merged entity with a 24.2% stake. BBVA Chile forms part of the International Banking business segment and this transaction is consistent with the Bank's focus on increasing scale in Peru, Mexico, Colombia and Chile.

On June 29, 2018, the Bank's Colombian subsidiary, Scotiabank Colpatria S.A. ("Scotiabank Colpatria"), completed the acquisition of Citibank's consumer (retail and credit cards) and small and medium enterprise operations in Colombia. This acquisition forms part of the International Banking business segment.

On May 9, 2018, the Bank's wholly owned subsidiary, Scotiabank Peru, announced that it reached an agreement to acquire a 51% controlling interest in Banco Cencosud, which offers credit cards and consumer loans in Peru, for approximately $130 million. Under the terms of the agreement, the two companies will also enter into a 15-year partnership to manage the credit card business and provide additional products and services to customers. This acquisition forms part of the International Banking business segment. Subject to regulatory approvals and closing conditions the acquisition is expected to close in fiscal Q1 2019.

On May 1, 2018, the Bank completed the acquisition of Jarislowsky Fraser Limited, an independent investment firm with approximately $40 billion in assets under management on behalf of institutional and high net worth clients, for approximately $980 million. Jarislowsky Fraser Limited forms part of the Canadian Banking business segment.

On August 4, 2017, the Bank completed the disposition of HollisWealth, its' independent wealth advisory business, to Industrial Alliance Insurance and Financial Services Inc. The agreement was first announced on December 5, 2016. The net assets and gain on sale are not material to the Bank.

On February 1, 2016, the Bank completed the acquisition of Citigroup's retail and commercial business in Costa Rica and Panama, for approximately US$360 million. This transaction has strengthened our core Central American franchise, including our credit card businesses in Costa Rica and Panama, as well as providing strong revenue growth and product diversification.

On November 16, 2015, the Bank acquired a $1,700 million credit card portfolio and platform from JPMorgan Chase. The acquisition aligned with our strategy of growing our Canadian credit card business and customer base, while expanding our product portfolio to become the first bank in Canada to offer customers Visa, AMEX and MasterCard credit card alternatives.

DESCRIPTION OF THE BANK'S BUSINESS

General Summary

The Bank is Canada's international bank and a leading financial services provider in North America, Latin America, the Caribbean and Central America, and Asia-Pacific. We are dedicated to helping our 25 million customers become better off through a broad range of advice, products and services, including personal and commercial banking, wealth management and private banking, corporate and investment banking and capital markets.

The Bank's three business operating segments are: Canadian Banking, International Banking and Global Banking and Markets.

Canadian Banking provides a full suite of financial advice and banking solutions, supported by an excellent customer experience, to over 10 million Retail, Small Business, Commercial Banking, and Wealth Management customers. It serves these customers through its network of 963 branches and more than 3,600 automated banking machines ("ABMs"), as well as internet, mobile and telephone banking and specialized sales teams.

International Banking has a well-established, diversified franchise that serves more than 15 million Retail, Corporate, and Commercial customers across our footprint. These customers are supported by over 58,000 employees, more than 1,800 branches and a network of contact and business support centers.

Global Banking and Markets ("GBM") conducts the Bank's wholesale banking and capital markets business with corporate, government and institutional investor clients. GBM is a full-service wholesale bank and investment dealer in Canada and Mexico, and offers a range of products and services in the U.S., Latin America (excluding Mexico), and in select markets in Europe, Asia and Australia.

A more complete description of services provided by each of the Bank's major business lines is available in the MD&A, on pages 38 to 53 inclusive, and those pages are herein incorporated by reference.

Competition

The Canadian banking system consists of numerous banks and other financial institutions. Certain large Canadian banks are required by law to be widely held because their equity exceeds a threshold of $12 billion. These banks compete nationwide through extensive branch networks, ABMs, telephone, internet and mobile banking offerings. In total, the Canadian system includes 32 domestic banks, 22 foreign banks and more than 300 credit unions and caisses populaires. More broadly, the Canadian financial services industry includes thousands of institutions such as life insurance companies, property and casualty insurers, consumer finance companies, independent investment dealers and independent retail mutual fund management companies.

Scotiabank is Canada's international bank and a leading financial services provider in the Americas. We are dedicated to helping our 25 million customers become better off through a broad range of advice, products and services, including personal and commercial banking, wealth management and private banking, corporate and investment banking, and capital markets. In providing these services and products, Scotiabank competes with local and international banks and other financial institutions.

Competition is reflected in the range of products and services offered, innovation in features, services, technology and delivery, as well as the various pricing schemes adopted. Canada ranks 7th in the world in terms of its financial market development, according to the 2017-18 Global Competitiveness survey of the World Economic Forum. Additionally, a greater number of service providers in the Canadian marketplace are offering alternative channels and competition in the payments space. The increased number of new entrants into the financial services sector in recent years has also underscored an enhanced level of competition.

Supervision and Regulation in Canada

As a Canadian Schedule I Bank, the Bank's activities in Canada are governed by the Bank Act, which is one of four main federal statutes governing the financial services industry in Canada. The other three statutes cover trust and loan companies, insurance companies and co-operative credit associations.

In accordance with the Bank Act, an organization may engage in and carry on the business of banking and such business generally as pertains to the business of banking. The Bank Act grants Canadian chartered banks broad powers of investment in the securities of other corporations and entities, but imposes limits upon substantial investments. Under the Bank Act, generally a bank has a substantial investment in a body corporate when (a) voting rights attached to the voting shares beneficially owned by the bank and by entities controlled by the bank exceed 10% of the voting rights attached to the outstanding voting shares of the body corporate, or (b) the total number of shares of the body corporate that are beneficially owned by the bank and entities controlled by the bank represent more than 25% of the total shareholders' equity of the body

corporate. In addition, under the Bank Act, a bank has a substantial investment in an unincorporated entity where the ownership interests in such entity beneficially owned by that bank and by entities controlled by that bank exceed 25% of all ownership interests in such entity. A Canadian chartered bank is permitted to have a substantial investment in entities whose activities are consistent with those of certain prescribed permitted substantial investments. In general, a bank will be permitted to invest in an entity that carries on any financial services activity. Further, a bank may generally invest in entities that carry on commercial activities that are related to the promotion, sale, delivery or distribution of a financial product or service. A bank may also invest in entities that provide professional investment management to closed-end funds and mutual funds, engage in the distribution of mutual funds and provide consulting and agency services for real property or service financial institutions and the bank may have downstream holding companies to hold these investments. In certain cases, the approval of the Minister of Finance (the "Minister") or the Superintendent of Financial Institutions Canada (the "Superintendent") is required prior to making the investment and/or the bank is required to control the entity. Canadian chartered banks may offer through their branch network credit or charge-card related insurance, creditors' disability insurance, creditors' life insurance, creditors' loss of employment insurance, creditors' vehicle inventory insurance, export credit insurance, mortgage insurance and travel insurance. Outside bank branches, a bank may offer insurance only in the limited circumstances prescribed by the Bank Act.

Without Minister approval, no person or group of associated persons may own more than 10% of any class of shares of the Bank. No person may be a major shareholder of a bank if the bank has equity of $12 billion or more (which includes the Bank). A person is a major shareholder of a bank if: (a) the aggregate of shares of any class of voting shares beneficially owned by that person and that are beneficially owned by any entities controlled by that person is more than 20% of that class of voting shares; or (b) the aggregate of shares of any class of non-voting shares beneficially owned by that person and that are beneficially owned by any entities controlled by that person is more than 30% of that class of non-voting shares. Ownership of the Bank's shares by Canadian or foreign governments is prohibited under the Bank Act. However, in 2009 certain amendments were made to the Bank Act that provide for limited circumstances in which the Canadian federal government may be permitted to acquire shares of a bank, including the Bank, if the Minister and Governor in Council were to conclude that to do so would promote stability in the financial system. While the government holds any shares of a bank, including the Bank, the Minister may impose certain terms and conditions, including conditions on the payment by the Bank of dividends on any of its shares.

The Superintendent is responsible to the Minister for the administration of the Bank Act. The Superintendent is required to make an annual examination of each bank to ensure compliance with the Bank Act and to ensure that each bank is in sound financial condition. The report of the Superintendent's examination is submitted to the Minister. The Bank is also required to disclose certain financial information. The Bank is subject to regulation by the Canada Deposit Insurance Corporation and the Financial Consumer Agency of Canada, and the activities of the Bank in Canada are subject to various other federal statutory provisions, including the *Proceeds of Crime (Money Laundering) and Terrorist Financing Act* which applies to all of the Bank's businesses in Canada. The activities of the Bank's trust subsidiaries and insurance subsidiaries are regulated in Canada under the *Trust and Loan Companies Act* and the *Insurance Companies Act*, respectively, and under provincial laws in respect of their activities in the provinces. Certain activities of the Bank and its subsidiaries acting as securities brokers, dealers (including investment and mutual fund dealers), underwriters and advisors (including investment counsel and portfolio managers) are regulated in Canada under provincial securities legislation and, in some cases, by self-regulatory organizations, such as the Investment Industry Regulatory Organization of Canada for broker dealers and the Mutual Fund Dealers Association for mutual fund dealers.

Bank Recapitalization (Bail-In) Regime

On September 23, 2018, the regulations under the *Canada Deposit Insurance Corporation Act* (Canada) (the "CDIC Act") and the Bank Act (collectively, the "Bail-In Regulations") which provides the details of conversion, issuance and compensation regimes for bail-in instruments issued by domestic systemically important banks, including the Bank, came into force. Pursuant to the CDIC Act, in circumstances where the Superintendent of Financial Institutions has determined that the Bank has ceased, or is about to cease, to be viable, the Governor in Council may, upon a recommendation of the Minister of Finance that he or she is of the opinion that it is in the public interest to do so, grant an order directing CDIC to convert all or a portion of certain shares and liabilities of the Bank into common shares of the Bank. For a description of the Canadian bank resolution powers and the consequent risk factors attaching to certain liabilities of the Bank reference is made to the Bank's website under Regulatory Disclosures for Fixed Income Investors[1]. The information on our website does not form part of this Annual Information Form.

[1] Visit webpage at https://www.scotiabank.com/ca/en/about/investors-shareholders/regulatory-disclosures.html.

International Supervision and Regulation

Capital adequacy for Canadian banks is regulated by the Office of the Superintendent of Financial Institutions ("OSFI") and subject to the revised capital adequacy requirements as published by the Basel Committee on Banking Supervisions, commonly referred to as Basel III. Additional information on the regulatory capital of the Bank and developments facing the Bank are described under the headings "Regulatory capital" and "Regulatory capital developments during the year" on pages 55-56 of the MD&A, respectively, and those sections are incorporated herein by reference.

Automatic Exchange of Information

Under the initiative of the Organization for Economic Co-Operation and Development, many countries have committed to automatic exchange of information relating to accounts held by tax residents of signatory countries, using a Common Reporting Standard ("CRS"). Canada's automatic exchange of financial account information arrangements with jurisdictions, other than the U.S., has been implemented in accordance with the CRS and the implementation of the CRS legislation in Canada was effective July 1, 2017. The Bank meets all obligations imposed under the CRS, in accordance with local laws, in Canada and all applicable jurisdictions in which it operates.

Supervision and Regulation Outside Canada – Key Jurisdictions

United States

The activities of the Bank and its subsidiaries in the U.S. are subject to federal and state supervision, regulation and examination by bank regulatory and other governmental agencies. The Bank is subject to the Bank Holding Company Act of 1956 ("BHCA") and the International Banking Act of 1978 and associated regulations of the Board of Governors of the Federal Reserve System (the "Federal Reserve Board"). The Federal Reserve Board and other banking regulators oversee the operation of the Bank's branches, offices and subsidiaries in the U.S. The SEC, state securities regulators and self-regulatory organizations, such as the Financial Industry Regulatory Authority, regulate its broker-dealer subsidiary and the Commodity Futures Trading Commission ("CFTC") oversees the Bank's swaps and commodities trading and clearing businesses.

The Bank is a "financial holding company" under the BHCA. This status allows a broad range of financial activities to be undertaken in the U.S. In addition, the Bank owns a commercial and retail bank in the Commonwealth of Puerto Rico that is subject to various laws and regulation and examination by the Commonwealth of Puerto Rico and federal regulators and is a Federal Deposit Insurance Corporation-insured depository institution. Provisions of the Federal Reserve Act place certain limitations and restrictions on the transactions that the Bank's U.S. branches, agencies and subsidiary bank can engage in with affiliates of the Bank.

The Bank, as a non-U.S. bank with U.S. operations, is required by the U.S. Bank Secrecy Act as amended by the USA PATRIOT Act of 2001, to take certain steps to prevent, detect and report individuals and entities involved in international money laundering and the financing of terrorism. Failure of a financial institution to comply with these requirements could have serious legal and reputational consequences for the institution.

The Bank is also subject to the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act"). Dodd-Frank Act 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 Volcker Rule impacts our global activities as its reach extends to the Bank and each of its subsidiaries and affiliates (subject to certain exceptions and exclusions). The Bank has an enterprise wide compliance program to meet the requirements of the Volcker Rule, which became effective on July 21, 2015.

On February 18, 2014, the Federal Reserve Board approved the final rule to implement the enhanced prudential standards and early remediation requirements of sections 165 and 166 of the Dodd-Frank Act (the "FBO Rule") for bank holding companies and foreign banking organizations. Regulation YY implements certain provisions of section 165 that require the Federal Reserve Board to establish enhanced prudential standards for bank holding companies and foreign banking organizations with total consolidated assets of $50 billion or more. With respect to foreign banking organizations, the overall

intent of Section 165 and Regulation YY is to strengthen the regulation of the U.S. operations of foreign banking organizations by requiring home country capital certification consistent with the Basel capital framework, home country capital stress tests comparable to U.S. standards, maintenance of a liquidity buffer for U.S. branches and agencies and establishment of a U.S. risk committee with the appointment of a U.S. Chief Risk Officer. The Bank has a Chief Risk Officer for the U.S., a U.S. Risk Committee and complies with the FBO Rule, which became effective in July 2016. The Bank is not currently required to form a U.S. intermediate holding company under the FBO Rule.

The SEC has taken several steps toward completing its regulatory framework for security-based swap dealers and majority security-based swap participants, as required under the Dodd-Frank Act. The SEC unanimously adopted final rules providing the registration process for security-based swap dealers and majority security-based swap participants, including the detailed forms that registrants will be required to file. The Bank, which is currently registered as a swap dealer with the CFTC, anticipates that it will be required to register as a security-based swap dealer with the SEC.

Mexico

Grupo Financiero Scotiabank Inverlat, S.A. de C.V. is an “affiliate holding company” pursuant to the Law for the Regulation of Financial Groups of Mexico and the Rules for the Establishment of Foreign Affiliate Financial Institutions of Mexico. The governing authority is the Ministry of Finance of Public Credit of Mexico and the supervising and regulatory authorities are the Central Bank of Mexico, the National Banking and Securities Commission and the National Commission for the Protection of the Users of Financial Services.

Peru

Scotiabank Peru S.A.A. is a “banking company” pursuant to the Law of the Banking System, Insurance and Private Pension Funds Administrators and applicable rules for financial groups enacted by the Superintendency of Banking System, Insurance and Private Pension Funds Administrators (“SBS”) and the Superintendency of Securities Market (“SMV”). Beside SBS and SMV, the other governing authorities are the Central Bank of Peru, and the National Institution for the Defense of Competition and Intellectual Property, in charge, among other functions, of the protection of consumers of financial services.

Pursuant to SBS and SMV regulations on ownership and control of supervised companies, Scotiabank Peru S.A.A. also reports on its holding company shareholders, Scotia Peru Holdings S.A. and NW Holdings Ltd.

Chile

Scotiabank Chile S.A. (“Scotiabank Chile”) is a special stock corporation governed by the provisions of the General Banking Act and by the provisions applicable to listed corporations contained in the Corporations Act. It is supervised by the Superintendency of Banks and Financial Institutions (“SBIF”), which is an autonomous institution related to the Chilean Government through the Ministry of Finance. Scotiabank Chile is also governed by the Central Bank of Chile and the National Consumer Service (Sernac), the latter being responsible for, among other functions, consumer protection with regards to financial services, in accordance with the provisions of the Financial Consumer Protection Act. Scotiabank Chile’s subsidiaries are supervised by the SBIF or by the Financial Markets Commission, according to their respective business lines.

Colombia

Scotiabank Colpatria, a subsidiary of the Bank, is a bank incorporated in compliance with the regulations of the Financial Superintendence of Colombia (Superintendencia Financiera de Colombia or “SFC”). The SFC is the supervisor of the national banking, insurance, pension funds, and securities markets under Colombian laws, with the purpose of assuring their stability, efficiency and transparency, as well as maintaining and fostering a sound and balanced development of the financial system as a whole, while protecting the interests of the public in Colombia. The SFC is responsible for inspecting, supervising and controlling Scotiabank Colpatria. Additionally, the SFC promotes, organizes and develops regulations in order to ensure the protection of investors, depositors, shareholders and stakeholders. The SFC is also responsible for financial customer protection.

United Kingdom

In respect of its London Branch, the Bank is authorized in the United Kingdom by the Prudential Regulation Authority ("PRA") and subject to regulation by the Financial Conduct Authority ("FCA") and limited regulation by the PRA. Scotiabank Europe plc, a wholly owned subsidiary of the Bank in the United Kingdom, is authorized by the PRA and regulated by the FCA and the PRA. Scotiabank Europe plc's prudential supervisor is the PRA and its conduct supervisor is the FCA.

Other Jurisdictions

Outside of the U.S., Mexico, Peru, Chile, Colombia and the United Kingdom, each of the Bank's branches, agencies and subsidiaries, many of which are banks in their own right, is also subject to the regulatory requirements of the jurisdiction in which it conducts its business.

Certain regulatory developments facing the Bank are described on pages 116 to 117 inclusive of the MD&A and those pages are incorporated herein by reference.

Environmental, Social and Governance Strategies

Each year the Bank publishes its Corporate Social Responsibility ("CSR") Report, which provides details of the Bank's CSR framework and progress on social, environmental and governance policies and strategies. This document and additional information can be found in the Corporate Social Responsibility section of the Bank's website at www.scotiabank.com/csr.

Risk Factors

The risks faced by the Bank are described on pages 72 to 109 inclusive of the MD&A and those pages are incorporated herein by reference.

DIVIDENDS

Restrictions on Dividend Payments

Under the Bank Act, the Bank is prohibited from declaring any dividends on its common shares or preferred shares when the Bank is, or would be placed by such a declaration, in contravention of the capital adequacy, liquidity or any other regulatory directives issued under the Bank Act. In addition, common share dividends cannot be paid unless all dividends to which preferred shareholders are then entitled have been paid or sufficient funds have been set aside to do so. In fiscal 2018, the Bank paid all of the applicable non-cumulative preferred share dividends. The Bank's preferred shares are entitled to preference over the common shares and over any other shares of the Bank ranking junior to the preferred shares with respect to the payment of dividends.

In the event that applicable cash distributions on any of the Scotiabank Trust Securities (meaning securities issued by Scotiabank Capital Trust and Scotiabank Tier 1 Trust) are not paid on a regular distribution date, the Bank has undertaken not to declare dividends of any kind on its preferred shares or common shares. Similarly, should the Bank fail to declare regular dividends on any of its directly issued and outstanding preferred shares or, if no preferred shares are outstanding, its common shares, cash distributions will also not be made on any of the Scotiabank Trust Securities.

In the event that distributions on the Subordinated Capital Notes (defined below) are not paid in full, the Bank has undertaken not to declare dividends on its common or preferred shares or redeem, purchase or otherwise retire such shares until the month commencing after such distributions have been made in full.

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

Dividend Payments

In fiscal 2018, the Bank's actual common share dividend payout ratio was 47.7%, compared to 46.6% in 2017. The Bank has declared and paid the following dividends on its common shares and preferred shares over the past three completed financial years:

	2018	2017	2016
Common Shares	$3.280000	$3.050000	$2.880000
Series 14[1]	—	—	$0.562500
Series 15[2]	—	—	$0.843750
Series 16[3]	—	$0.328125	$1.312500
Series 17[4]	—	$0.700000	$1.400000
Series 18[5]	$0.418750	$0.837500	$0.837500
Series 19[5]	$0.374547	$0.642626	$0.628938
Series 20[6]	$0.902500	$0.902500	$0.902500
Series 21[6]	$0.691967	$0.554501	$0.541438
Series 22[7]	$0.957500	$0.957500	$0.957500
Series 23[7]	$0.736967	$0.600126	$0.586438
Series 30[8]	$0.455000	$0.455000	$0.455000
Series 31[8]	$0.516968	$0.380126	$0.366438
Series 32[9]	$0.515752	$0.515752	$0.638235
Series 33[9]	$0.601968	$0.465159	$0.334959
Series 34[10]	$1.375000	$1.375000	$1.184800
Series 36[11]	$1.375000	$1.375000	$0.852350
Series 38[12]	$1.212500	$1.351175	—
Series 40[13]	—	—	—

DESCRIPTION OF THE BANK'S CAPITAL STRUCTURE

The following summary of the Bank's share capital is qualified in its entirety by the Bank's by-laws and the actual terms and conditions of such securities. For more details on the Bank's capital structure, see pages 55 to 62 of the MD&A and notes 21 and 24 of the consolidated financial statements for the year ended October 31, 2018. The Bank incorporates those pages and notes by reference.

Common Shares

The authorized common share capital of the Bank consists of an unlimited number of common shares, without nominal or par value, of which 1,227,027,624 common shares were issued and outstanding as at October 31, 2018.

Holders of the Bank's common shares are entitled to vote at all meetings of the shareholders of the Bank except meetings at which only the holders of preferred shares of the Bank are entitled to vote. Common shareholders are entitled to receive dividends, as and when declared on the common shares.

1 On April 27, 2016, the Bank redeemed all of its issued and outstanding Preferred Shares, Series 14.
2 On July 27, 2016, the Bank redeemed all of its issued and outstanding Preferred Shares, Series 15.
3 On January 27, 2017, the Bank redeemed all of its issued and outstanding Preferred Shares, Series 16
4 On April 26, 2017, the Bank redeemed all of its issued and outstanding Preferred Shares, Series 17
5 On April 26, 2018, the Bank redeemed all of its issued and outstanding Preferred Series 18 and 19.
6 On October 26, 2018, the Bank redeemed all of its issued and outstanding Preferred Shares, Series 20 and Series 21.
7 On January 26, 2014, 2,623,056 shares of Preferred Shares, Series 22 were converted to Preferred Shares, Series 23.
8 On April 26, 2015, 4,457,262 shares of Preferred Shares, Series 30 were converted to Preferred Shares, Series 31.
9 On February 2, 2016, 5,184,345 shares of Preferred Shares, Series 32 were converted to Preferred Shares, Series 33.
10 On December 17, 2015, 14,000,000 Preferred Shares, Series 34 were issued.
11 On March 14, 2016, 20,000,000 Preferred Shares, Series 36 were issued.
12 On September 16, 2016, 20,000,000 Preferred Shares, Series 38 were issued.
13 On October 12, 2018, 12,000,000 Preferred Shares, Series 40 were issued.

After the payment to the holders of the preferred shares of the amount or amounts to which they may be entitled, the holders of the Bank's common shares shall be entitled to receive the remaining property of the Bank upon liquidation, dissolution or winding-up thereof.

Preferred Shares – General

The authorized preferred share capital of the Bank consists of an unlimited number of preferred shares without nominal or par value issuable in series. The term "Preferred Shares" shall refer to all authorized preferred shares of the Bank.

As at October 31, 2018, Non-cumulative Preferred Shares, Series 22, 23, 30, 31, 32, 33, 34, 36, 38 and 40 were outstanding. In addition, Non-cumulative Preferred Shares, Series 35, 37, 39 and 41 were authorized but are not currently outstanding.

The Preferred Shares are entitled to preference over the common shares and over any other shares of the Bank ranking junior to the Preferred Shares with respect to the payment of dividends and upon any distribution of assets in the event of liquidation, dissolution or winding-up of the Bank.

The Bank may not create, without the approval of the holders of Preferred Shares, any other class of shares ranking prior to or on a parity with the Preferred Shares, increase the authorized number of Preferred Shares or amend the provisions attaching to the Preferred Shares.

Any approval to be given by the holders of the Preferred Shares may be given by a resolution carried by the affirmative vote of not less than 66 2/3% of the votes cast at a meeting of holders of Preferred Shares at which a majority of the outstanding Preferred Shares is represented or, if no quorum is present at such meeting, at any adjourned meeting at which no quorum requirements would apply.

Effective January 1, 2013, in accordance with capital adequacy requirements adopted by OSFI, non-common capital instruments issued after January 1, 2013, including Preferred Shares, must include terms providing for the full and permanent conversion of such securities into common shares upon the occurrence of certain trigger events relating to financial viability (the Non-Viability Contingent Capital or "NVCC requirements") in order to qualify as regulatory capital. Since January 1, 2013, all outstanding capital instruments that do not meet the NVCC requirements are considered non-qualifying capital instruments and are being phased out. Preferred Shares, Series 34, 35, 36, 37, 38, 39, 40 and 41 satisfy the NVCC requirements and were all issued or authorized after January 1, 2013.

Certain Provisions of the Preferred Shares

Dividends

The holders of the Preferred Shares will be entitled to receive either a fixed or floating rate quarterly non-cumulative preferential cash dividend, as and when declared by the Board of Directors of the Bank, subject to the provisions of the Bank Act, on the third last business day of each of January, April, July and October in each year at the rate specified in the terms of each series. If the Board of Directors of the Bank does not declare the dividends, or any part thereof, on a series of Preferred Shares on or before the dividend payment date for a particular quarter, then the entitlement of the holders of such series of Preferred Shares to receive such dividends, or to any part thereof, for such quarter shall be forever extinguished.

The holders of the Preferred Shares, Series 22, 30, 32, 34, 36, 38 and 40 are entitled to receive fixed quarterly, non-cumulative cash dividends, as and when declared by the Board of Directors of the Bank, for the specified initial period as set out in the terms of each series, and thereafter the dividend rate for each series will reset every five years at the rate specified in the terms for such series.

The holders of the Preferred Shares, Series 23, 31, 33, 35, 37, 39 and 41 are entitled to receive floating rate quarterly, non-cumulative cash dividends, as and when declared by the Board of Directors of the Bank. No Preferred Shares, Series 35, 37, 39 or 41 are currently outstanding.

Redemption

The Preferred Shares currently outstanding will not be redeemable prior to the date specified in the terms for each series. On and after such dates for the Preferred Shares specified in the foregoing sentence and for all other series of Preferred Shares issued and outstanding as at October 31, 2018, subject to the provisions of the Bank Act and to the prior consent of the Superintendent and to certain conditions being met, the Bank may redeem at the time specified in the terms of each series all or any part of an outstanding series of Preferred Shares at the Bank's option without the consent of the holder, by the payment of an amount in cash for each such share so redeemed as specified in the terms of each series.

Notice of any redemption of any series of Preferred Shares will be given by the Bank at least 30 days and not more than 60 days prior to the date fixed for redemption. If less than all the outstanding Preferred Shares in any series are at any time to be redeemed, the shares to be redeemed will be redeemed *pro rata*, disregarding fractions.

Rights Upon Dissolution or Winding-Up

In the event of the liquidation, dissolution or winding-up of the Bank, the holders of each series of the Preferred Shares shall be entitled to receive $25.00 per Preferred Share, together with all dividends declared and unpaid to the date of payment before any amount shall be paid or any assets of the Bank distributed to the holders of any shares ranking junior to the Preferred Shares. The holders of each series of the Preferred Shares shall not be entitled to share in any further distribution of the assets of the Bank.

Restrictions on Dividends and Retirement of Shares

So long as any shares of a series of Preferred Shares are outstanding, the Bank will not, without the approval of the holders of the relevant series of Preferred Shares:

(a) declare, pay or set apart for payment any dividends on the common shares of the Bank or any other shares ranking junior to the series of Preferred Shares (other than stock dividends payable in shares ranking junior to the series of Preferred Shares);

(b) redeem, purchase or otherwise retire any common shares or any other shares ranking junior to the series of Preferred Shares (except out of the net cash proceeds of a substantially concurrent issue of shares ranking junior to the series of Preferred Shares);

(c) redeem, purchase or otherwise retire less than all of the series of Preferred Shares; or

(d) except pursuant to any purchase obligation, sinking fund, retraction privilege or mandatory redemption provisions attaching to any series of Preferred Shares of the Bank, redeem, purchase or otherwise retire any other shares ranking on a parity with the series of Preferred Shares;

unless, in each case, all dividends up to and including those payable on the dividend payment date for the last completed period for which dividends shall be payable shall have been declared and paid or set apart for payment in respect of each series of cumulative preferred shares of the Bank then issued and outstanding and on all other cumulative shares ranking on a parity with the preferred shares of the Bank and there shall have been paid or set apart for payment all declared dividends in respect of each series of non-cumulative preferred shares of the Bank (including the series of Preferred Shares) then issued and outstanding and on all other non-cumulative shares ranking on a parity with the Preferred Shares of the Bank.

Purchase for Cancellation

Subject to the provisions of the Bank Act, the prior consent of the Superintendent and certain conditions being met, the Bank may at any time purchase for cancellation any series of Preferred Shares outstanding, in the open market at the lowest price or prices at which in the opinion of the Board of Directors of the Bank such shares are obtainable.

Issuance of Other Series of Preferred Shares

The Bank may issue other series of preferred shares ranking on parity with the Preferred Shares without the authorization of the holders of the Preferred Shares.

Voting Rights

Subject to the provisions of the Bank Act, the holders of a series of Preferred Shares as such will not be entitled to receive notice of, attend, or vote at, any meeting of the shareholders of the Bank unless and until the first time at which the Board of Directors of the Bank has not declared the whole dividend on such series of Preferred Shares in respect of any quarter. In that event, the holders of such Preferred Shares will be entitled to receive notice of, and to attend, meetings of shareholders at which directors of the Bank are to be elected and will be entitled to one vote for each Preferred Share held. The voting rights of the holders of such series of Preferred Shares shall forthwith cease upon payment by the Bank of the first dividend on the series of Preferred Shares to which the holders are entitled subsequent to the time such voting rights first arose until such time as the Bank may again fail to declare the whole dividend on such series of Preferred Shares in any quarter, in which event such voting rights shall become effective again and so on from time to time.

Other Equity Instruments – Subordinated Capital Notes – General

The Bank currently has outstanding US$1.25 billion 4.650% Fixed to Floating Rate Non-Cumulative Subordinated Additional Tier 1 Capital Notes (NVCC) (“Subordinated Capital Notes”). The Subordinated Capital Notes have been determined to be compound instruments that have both equity and liability features. For more details, see note 24 of the consolidated financial statements for the year ended October 31, 2018.

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

The Subordinated Capital Notes includes terms providing for the full and permanent conversion of such securities into common shares of the Bank upon the occurrence of certain trigger events relating to NVCC requirements in order to qualify as regulatory capital.

Certain Provisions of the Subordinated Capital Notes

Distributions and Restrictions on Dividend and Retirement of Shares

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

Interest will be due and payable on an interest payment date only if it is not cancelled by the Bank. Any cancelled interest payments will not be cumulative. The Bank has the sole and absolute discretion at all times and for any reason to cancel (in whole or in part), with notice to the holders of the Notes, any interest payment that would otherwise be payable on any interest payment date. As a result, the holder may not receive any interest on any interest payment date or at any other times, and the holder will have no claims whatsoever in respect of that cancelled interest.

Maturity and Redemption

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

Purchase for Cancellation

Subject to regulatory consent, the Bank may at any time and from time to time, repurchase for cancellation any Subordinated Capital Notes in the open market, by tender or by private agreement, in any manner and at any price or at differing prices.

Events of Default

An event of default in respect of the Subordinated Capital Notes will occur only if the Bank becomes bankrupt or insolvent or becomes subject to the provisions of the *Winding-up and Restructuring Act* (Canada), consents to the institution of bankruptcy or insolvency proceedings against it, resolves to wind-up, liquidate or dissolve, is ordered wound-up or otherwise acknowledges its insolvency. Neither a failure to make a payment on the Subordinated Capital Notes when due (including any interest payment, whether as a result of cancellation or otherwise) nor an NVCC automatic conversion upon the occurrence of a trigger event will constitute an event of default.

Issuance of other Senior or *Pari Passu* Securities

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

Voting Rights

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

Constraints on Ownership of the Bank's Shares

The Bank Act contains restrictions on the issue, transfer, acquisition, beneficial ownership and voting of all shares of a chartered bank. Please refer to the section above entitled "Description of the Bank's Business – General Summary – Supervision and Regulation in Canada" for a summary of these restrictions.

Credit Ratings of Securities and Liquidity

Credit ratings affect the Bank's access to capital markets and borrowing costs, as well as the terms on which the Bank can conduct derivative and hedging transactions. The following ratings have been assigned to the Bank's securities by the rating agencies noted below, which are independent third parties. Credit ratings, including stability or provisional ratings, are not recommendations to purchase, sell or hold a security as they do not comment on market price or suitability for a particular investor. Ratings may not reflect the potential impact of all risks on the value of securities. In addition, real or anticipated changes in the rating assigned to a security will generally affect the market value of that security. Ratings are subject to revision or withdrawal at any time by the rating agency. Each rating listed in the chart below should be evaluated independently of any other rating applicable to the Bank's debt, Subordinated Additional Tier 1 Capital Notes and Preferred Shares.

	Moody's Investor Service (Moody's)		Standard & Poor's Ratings Services (S&P)		Fitch Ratings (Fitch)		DBRS Limited (DBRS)	
	Rating	Rank[1]	Rating	Rank[1]	Rating	Rank[1]	Rating	Rank[1]
Legacy Senior Debt[2]	Aa2	2 of 9	A+	3 of 10	AA-	2 of 10	AA	2 of 10
Senior Debt[3]	A2	3 of 9	A-	3 of 10	AA-	2 of 10	AA (low)	2 of 10
Short-term deposits/commercial paper	P-1	1 of 4	A-1	1 of 6	F1+	1 of 6	R-1(high)	1 of 10
Subordinated debt	Baa1	4 of 9	A-	3 of 10	A+	3 of 10	A (high)	3 of 10
Subordinated debt (NVCC)[4]	Baa1	4 of 9	BBB+	4 of 10	N/A	N/A	A(low)	3 of 10
Subordinated additional tier 1 capital notes (NVCC)[4]	Baa3	4 of 9	BBB-	3 of 9	N/A	N/A	BBB (high)	4 of 10
Non-cumulative Preferred Shares	Baa3	4 of 9	BBB/P-2[5]	3 of 9 / 2 of 8	N/A	N/A	Pfd-2(high)	2 of 6
Non-cumulative Preferred Shares (NVCC)[4]	Baa3	4 of 9	BBB-/P-2 (low)[5]	3 of 9 / 2 of 8	N/A	N/A	Pfd-2	2 of 6
Outlook	Stable	N/A	Stable	N/A	Stable	N/A	Stable	N/A

(1) Rank, according to each rating agency's public website, refers to the assigned ratings ranking of all major assignable ratings for each debt of share class, 1 being the highest. Each assignable major rating may be modified further (+/-, high/low, 1/2/3) to show relative standing within the major rating categories.

(2) 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.

(3) Subject to conversion under the bank recapitalization "bail-in" regime.

(4) Non-Viability Contingent Capital (NVCC)

(5) Canadian Scale

On July 5, 2018, DBRS affirmed the Bank's respective long-term issuer and short-term instruments rating of AA and R-1 (high), respectively.

On July 16, 2018, Moody's upgraded the Bank's long-term ratings by two-notches to Aa2 from A1 and changed the trend to stable from negative (on the Bank's Long-Term Issuer Ratings, Senior Debt Ratings and Deposit Ratings), following the finalization of Canada's impending bail-in regime.

On August 27, 2018, S&P affirmed the Bank's deposits and senior debt and short term-instruments rating of A+ and A-1, respectively.

On September 24, 2018, Moody's affirmed the P-1 short-term debt ratings of the Bank and maintained the long-term rating of Aa2. Moody's also downgraded the Issuer Rating of the Bank to align with the provisional rating of bail-in debt (Junior Senior Unsecured program rating) to be issued by the Bank commencing September 23, 2018. Moody's also maintains the stable outlook on the Issuer Ratings of the Bank.

On October 22, 2018, Fitch affirmed the Bank's long and short term rating of AA- and F1+, respectively.

The Bank makes payments in the ordinary course to the credit rating agencies for the rating services associated with the assignment of the credit ratings noted above. In addition, the Bank made customary payments in respect of certain other services provided to the Bank by the aforementioned credit rating agencies.

A definition of the categories of each rating as at November 26, 2018 has been obtained from the respective rating agency's website and is outlined in Schedule B, and a more detailed explanation may be obtained from the applicable rating agency.

MARKET FOR SECURITIES OF THE BANK

The Bank's common shares are listed under the stock symbol "BNS" on the Toronto Stock Exchange ("TSX") and the New York Stock Exchange ("NYSE"). The Preferred Shares are listed on the TSX under the stock symbols "BNS.PR.R" for the Preferred Shares, Series 22, "BNS.PR.C" for the Preferred Shares, Series 23, "BNS.PR.Y" for the Preferred Shares, Series 30, "BNS.PR.D" for the Preferred Shares, Series 31, "BNS.PR.Z" for the Preferred Shares, Series 32, "BNS.PR.F" for the Preferred Shares, Series 33, "BNS PR.E" for the Preferred Shares, Series 34, "BNS PR.G" for the Preferred Shares, Series 36, "BNS PR.H" for the Preferred Shares, Series 38, "BNS.PR.I" for the Preferred Shares, Series 40. From time to time, the Bank also has deposit notes and other securities listed on the London Stock Exchange, Singapore Stock Exchange, Swiss Stock Exchange, Taipei Exchange and the Tokyo Stock Exchange.

Trading Price and Volume

The following table sets out the price range and trading volume of the Bank's securities on the TSX (as reported by Bloomberg) for the periods indicated:

		Preferred Shares													
	Common Shares	Series 18[1]	Series 19[1]	Series 20[2]	Series 21[2]	Series 22	Series 23	Series 30	Series 31	Series 32	Series 33	Series 34	Series 36	Series 38	Series 40
November 2017															
-High Price ($)	$ 85.50	$25.08	$25.05	$25.11	$24.89	$25.25	$24.84	$23.40	$23.44	$23.20	$23.41	$27.16	$27.19	$26.65	—
-Low Price ($)	$ 81.25	$24.96	$24.83	$24.92	$24.61	$25.05	$24.65	$23.13	$22.88	$22.77	$22.89	$26.76	$26.75	$26.22	
-Volume ('000)	54,411	133	165	99	43	325	50	213	525	137	32	256	263	1,070	
December 2017															
-High Price ($)	$ 83.79	$25.22	$25.15	$25.21	$24.95	$25.39	$24.91	$23.36	$23.39	$23.20	$23.43	$27.47	$27.31	$26.52	—
-Low Price ($)	$ 80.79	$24.97	$24.91	$24.93	$24.51	$25.09	$24.77	$23.12	$23.16	$22.88	$22.89	$26.77	$26.84	$26.12	
-Volume ('000)	56,243	138	222	97	158	336	59	112	52	392	44	252	261	732	
January 2018															
-High Price ($)	$ 83.22	$25.17	$25.03	$25.05	$24.98	$25.17	$25.13	$23.95	$23.97	$23.73	$23.85	$26.94	$27.07	$26.28	—
-Low Price ($)	$ 80.79	$24.98	$24.93	$24.94	$24.75	$25.01	$24.79	$23.14	$23.40	$22.90	$23.26	$26.52	$26.67	$25.99	
-Volume ('000)	68,806	791	424	1,161	564	506	117	196	513	211	194	417	482	423	
February 2018															
-High Price ($)	$ 81.72	$25.09	$25.21	$25.04	$24.83	$25.06	$24.98	$23.49	$23.74	$23.35	$23.69	$26.71	$26.85	$26.30	—
-Low Price ($)	$ 75.20	$24.92	$24.93	$24.76	$24.58	$24.88	$24.80	$23.19	$23.24	$22.91	$23.26	$26.13	$26.31	$25.60	
-Volume ('000)	82,018	241	499	832	40	212	27	165	61	580	108	308	220	556	
March 2018															
-High Price ($)	$ 82.71	$25.17	$25.15	$25.15	$24.87	$25.08	$24.95	$23.45	$23.66	$23.26	$23.38	$26.59	$26.75	$26.22	
-Low Price ($)	$ 75.27	$24.96	$24.94	$24.93	$24.70	$24.84	$24.44	$23.20	$23.39	$22.81	$22.94	$26.30	$26.44	$25.84	—
-Volume ('000)	80,539	166	613	383	91	301	128	296	50	468	54	426	461	1,643	
April 2018															
-High Price ($)	$ 79.73	$25.07	$25.00	$25.12	$24.95	$25.19	$25.08	$23.91	$23.96	$23.39	$23.62	$26.44	$26.53	$26.10	—
-Low Price ($)	$ 76.06	$24.97	$24.97	$24.81	$24.70	$24.87	$24.70	$23.22	$23.26	$22.70	$22.69	$26.03	$26.20	$25.74	
-Volume ('000)	58,205	221	566	154	53	474	32	192	104	327	56	262	204	328	
May 2018															
-High Price ($)	$ 80.79			$25.14	$25.00	$25.25	$25.17	$24.30	$24.25	$23.84	$24.05	$26.74	$26.89	$26.49	—
-Low Price ($)	$ 76.67	—	—	$24.99	$24.83	$25.03	$24.95	$23.47	$23.56	$23.28	$23.51	$26.35	$26.44	$26.03	
-Volume ('000)	75,853			199	257	389	23	153	218	216	70	528	648	374	
June 2018															
-High Price ($)	$ 77.51			$25.14	$25.00	$25.16	$25.09	$23.75	$23.84	$23.47	$23.84	$26.63	$26.67	$26.32	—
-Low Price ($)	$ 74.00	—	—	$24.90	$24.83	$24.88	$24.91	$23.43	$23.54	$23.13	$23.61	$26.18	$26.22	$25.93	
-Volume ('000)	105,943			93	74	283	29	72	27	181	47	372	235	414	
July 2018															
-High Price ($)	$ 77.18			$25.10	$25.00	$25.14	$25.12	$24.14	$24.15	$23.79	$24.07	$26.40	$26.44	$26.24	—
-Low Price ($)	$ 73.91	—	—	$24.82	$24.88	$24.94	$24.96	$23.50	$23.75	$23.18	$23.51	$26.16	$26.01	$25.86	
-Volume ('000)	58,847			134	58	147	39	85	46	175	310	263	1,486	560	
August 2018															
-High Price ($)	$ 78.60			$25.12	$25.08	$25.23	$25.22	$24.16	$24.33	$23.93	$24.19	$26.47	$26.52	$26.21	—
-Low Price ($)	$ 75.50	—	—	$24.97	$24.94	$25.06	$25.03	$23.84	$23.94	$23.66	$23.91	$26.29	$26.35	$26.03	
-Volume ('000)	76,738			49	28	235	17	156	96	250	123	175	637	314	
September 2018															
-High Price ($)	$ 78.25			$25.21	$25.15	$25.34	$25.24	$24.16	$24.30	$23.95	$24.24	$26.48	$26.50	$26.15	—
-Low Price ($)	$ 74.62	—	—	$25.04	$25.03	$25.12	$25.08	$23.93	$24.20	$23.72	$24.05	$26.23	$26.30	$26.00	
-Volume ('000)	72,576			128	445	101	18	297	164	466	47	183	684	1,262	
October, 2018															
-High Price ($)	$ 77.15			$25.00	$25.00	$25.14	$25.08	$24.12	$24.30	$23.79	$24.17	$26.50	$26.54	$26.09	$25.06
-Low Price ($)	$ 69.01	—	—	$24.97	$24.80	$24.85	$24.96	$23.73	$24.06	$23.01	$23.90	$25.78	$25.88	$25.58	$24.51
-Volume ('000)	92,255			384	1,219	518	74	247	143	549	145	334	363	644	2,741

(1) Redeemed on April 26, 2018.
(2) Redeemed on October 26, 2018.

Prior Sales

From time to time, the Bank issues principal at risk notes, which are securities issued by the Bank for which the amount payable at maturity is determined by reference to the price, value or level of an underlying interest, including an index, exchange traded fund or a notional basket of equities or other securities. For information about the Bank's issuance of subordinated indebtedness and other equity instruments since October 31, 2017, see notes 21 and 24 to the Bank's consolidated financial statements for the year ended October 31, 2018, which is incorporated herein by reference.

DIRECTORS AND EXECUTIVE OFFICERS OF THE BANK

Directors and Board Committees of the Bank

The following table sets out the Bank's directors as of November 27, 2018. The term of office of each director expires at the close of the Bank's next annual meeting of shareholders. Information concerning the nominees proposed by management for election as directors at the annual meeting of shareholders will be contained in the Bank's 2019 Management Proxy Circular.

Name and Place of Residence	Board Committee Memberships	Principal Occupation
Nora A. Aufreiter Toronto, Ontario, Canada (Director since August 25, 2014)	CGC HRC	Corporate Director and a former Senior Partner and leader of McKinsey & Company's Toronto office
Guillermo E. Babatz Mexico City, Mexico (Director since January 28, 2014)	RC HRC	Managing Partner of Atik Capital, S.C., an advisory firm specializing in structured finance
Scott B. Bonham Atherton, California, U.S.A. (Director since January 25, 2016)	ACRC CGC	Corporate Director and co-founder of Intentional Capital, a privately-held real estate asset management company
Charles H. Dallara, Ph.D. Oak Hill, Virginia, U.S.A. (Director since September 23, 2013)	ACRC RC	Chairman of the Americas, Partner and a member of the board of directors of Partners Group Holding AG, a private market investment and asset management firm
Tiff Macklem, Ph.D. Toronto, Ontario, Canada (Director since June 22, 2015)	ACRC RC – Chair	Dean of the Rotman School of Management at the University of Toronto
Thomas C. O'Neill Toronto, Ontario, Canada (Director since May 26, 2008)	ACRC CGC HRC RC	Chairman of the Board of the Bank and Corporate Director
Eduardo Pacheco Bogota, Colombia (Director since September 25, 2015)	RC	Chief Executive Officer and a Director of Mercantil Colpatria S.A.
Michael D. Penner Westmount, Quebec, Canada (Director since June 26, 2017)	ACRC CGC	Corporate Director
Brian J. Porter Toronto, Ontario, Canada (Director since April 9, 2013)	None	President and Chief Executive Officer of the Bank
Una M. Power Vancouver, British Columbia, Canada (Director since April 12, 2016)	ACRC – Chair HRC	Corporate Director

Name and Place of Residence	Board Committee Memberships	Principal Occupation
Aaron W. Regent Toronto, Ontario, Canada (Director since April 9, 2013)	HRC – Chair RC	Founding Partner of Magris Resources Inc. and Chairman and Chief Executive Officer of Niobec Inc., companies involved with the acquisition, development and operation of mining assets on a global basis
Indira V. Samarasekera, O.C., Ph.D. Vancouver, British Columbia, Canada (Director since May 26, 2008)	CGC HRC	Senior Advisor at Bennett Jones LLP, a law firm, and Corporate Director
Susan L. Segal New York, New York, U.S.A. (Director since December 2, 2011)	CGC – Chair RC	President and Chief Executive Officer of the Americas Society, an organization dedicated to education, debate and dialogue in the Americas and of the Council of the Americas, an international business organization for companies in the western hemisphere
Barbara S. Thomas Belleair, Florida, U.S.A. (Director since September 28, 2004)	CGC HRC	Corporate Director
L. Scott Thomson Vancouver, British Columbia, Canada (Director since April 12, 2016)	ACRC HRC	President and Chief Executive Officer of Finning International Inc., the world's largest Caterpillar equipment dealer
Benita M. Warmbold Toronto, Ontario, Canada (Director since October 29, 2018)	ACRC HRC	Corporate Director

Notes:
ACRC – Audit and Conduct Review Committee
CGC – Corporate Governance Committee
HRC – Human Resources Committee
RC – Risk Committee

All directors have held the positions, or other executive positions with the same, predecessor or associated firms, set out in this AIF for the past five years with the exception of: Scott B. Bonham, who prior to June 2015 was the co-founder of GGV Capital; Tiff Macklem, who prior to June 2014, was Senior Deputy Governor of the Bank of Canada; Michael D. Penner, who was the President and Chief Executive Officer of Peds Legwear, a clothing manufacturer and distributor until it was sold to Gildan Activewear Inc. in August 2016 and who prior to November 2018, was Chairman of the Board of Directors of Hydro-Québec; Una M. Power, who prior to March 2016, was Chief Financial Officer of Nexen Energy ULC, an energy company; Indira V. Samarasekera, who prior to July 2015, was President and Vice-Chancellor of the University of Alberta; and Benita M. Warmbold, who prior to July 2017, was Senior Managing Director and Chief Financial Officer of the Canada Pension Plan Investment Board.

Brian Porter is non-independent, due to his position as President and Chief Executive Officer. Eduardo Pacheco is also non-independent, due to his business relationships with the Bank and its subsidiary, Scotiabank Colpatria.

Executive Officers of the Bank

The following are the Bank's executive officers, their titles and places of residence in Canada (except as otherwise noted) as of November 27, 2018:

Name and Principal Occupation	Place of Residence
Brian J. Porter President and Chief Executive Officer	Toronto, Ontario
Rajagopal Viswanathan Executive Vice President and Chief Financial Officer	Oakville, Ontario
Ignacio “Nacho” Deschamps Group Head, International Banking and Digital Transformation	Toronto, Ontario
Dieter W. Jentsch Group Head, Global Banking and Markets	King City, Ontario
Barbara F. Mason Group Head and Chief Human Resources Officer	Toronto, Ontario
James O’Sullivan Group Head, Canadian Banking	Toronto, Ontario
Dan Rees Group Head, Operations	Toronto, Ontario
Michael Zerbs Group Head & Chief Technology Officer	Markham, Ontario
Ian Arellano Executive Vice President and General Counsel	Toronto, Ontario
Paul Baroni Executive Vice President & Chief Auditor	Toronto, Ontario
Andrew H.W. Branion Executive Vice President and Group Treasurer	North York, Ontario
Tracy Bryan Executive Vice President, Contact Centres & Operations	Whitby, Ontario
John Doig Executive Vice President and Chief Marketing Officer	Toronto, Ontario
Charles Emond Executive Vice President, Finance	Candiac, Quebec
Terry K. Fryett Executive Vice President and Chief Credit Officer	Toronto, Ontario
Glen Gowland Executive Vice President, Global Wealth Management	Toronto, Ontario
Michael Henry Executive Vice-President and Chief Data Officer	Mississauga, Ontario
Jake Lawrence Executive Vice President, Global Banking and Markets, U.S.	Toronto, Ontario
Rania Llewellyn Executive Vice President, Global Business Payments	Toronto, Ontario
Daniel Moore Chief Risk Officer	Toronto, Ontario
James Neate Global Head of Corporate & Investment Banking	Mississauga, Ontario
Gillian Riley Executive Vice President, Canadian Commercial Banking	Toronto, Ontario
Shawn Rose Executive Vice President and Chief Digital Officer	Toronto, Ontario
Francisco Sardon de Taboada Executive Vice President and Country Head, Chile	Santiago, Chile
Anya Schnoor Executive Vice-President, Retail Products	Toronto, Ontario
Laurie Stang Executive Vice President, Retail Distribution	Airdrie, Alberta

Name and Principal Occupation	Place of Residence
Maria Theofilaktidis Executive Vice-President, Chief Compliance Officer & Head of Enterprise Risk	Toronto, Ontario
Philip Thomas Executive Vice President & Chief Retail Risk Officer	Cobourg, Ontario
Miguel Uccelli Executive Vice President and Country Head, Peru	San Isidro, Lima, Peru
Ashley Veasey Executive Vice President & Global Chief Information Officer, Business Technology	Toronto, Ontario
Chadwick Westlake Executive Vice President, Enterprise Productivity and Canadian Finance	Mississauga, Ontario
Enrique Zorrilla Fullaondo Executive Vice President and Country Head, Scotiabank Mexico	Huixquilucan, Estado de Mexico, Mexico

All of the executive officers of the Bank have been actively engaged for more than five years in the affairs of the Bank in executive or senior management capacities, except: Ian Arellano, who prior to September 2017, was co-head of Torys LLP's International Initiative and a senior partner of Torys LLP law firm; Ignacio Deschamps, who prior to June 2015, was Chief Executive Officer of BBVA Bancomer; Shawn Rose, who prior to June 2016, was Group Chief Product Officer at Moneysupermarket (MSM) Group PLC and prior to that, was a Manager at Egy Rose LLC and prior to that, was a Vice-President at Pearson LLC; Michael Zerbs, who prior to May 2014, was Vice-President, Risk Analytics at IBM and prior to that, was the President and Chief Operating Officer at Algorithmics; Chadwick Westlake, who from September to November 2016 was Chief Financial Officer of Royal & Sun Alliance Insurance Company of Canada, Inc.; and Ashley Veasey, who prior to February 2018 was the Group Chief Information Officer and Chief Digital Officer, Barclays Africa Group and prior to that, was Chief Information Officer, Head of Technology & Operations (Hong Kong) for Standard Chartered Bank.

Cease Trade Orders, Bankruptcies, Penalties or Sanctions

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

(a) is, as at the date of this AIF or has been within the last 10 years, a director, chief executive officer or chief financial officer of any company that was the subject of a cease trade order or similar 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:

  (i) while the director or executive officer was acting in the capacity as director, chief executive officer or chief financial officer; or

  (ii) 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 the date of this AIF, or has been within the last 10 years, a director or executive officer of any company that, while that person was acting in that capacity or within a year of that 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, or within 10 years before the date of this AIF, 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,

except Ms. Thomas who was, until September 2, 2009, a director of Spectrum Brands, Inc., which filed for bankruptcy protection under Chapter 11 of the U.S. Bankruptcy Code in February 2009 and emerged as a solvent private company on September 2, 2009.

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

Shareholdings of Management

To the knowledge of the Bank, the directors and executive officers of the Bank as a group own, or exercise control or direction over, less than one per cent of the outstanding common shares of the Bank. The Bank's directors or executive officers own, or exercise control or direction over, less than one percent of the outstanding shares of any of the Bank's subsidiaries.

LEGAL PROCEEDINGS AND REGULATORY ACTIONS

In the ordinary course of business, the Bank and its subsidiaries are routinely defendants in, or parties to a number of pending and threatened legal actions and regulatory proceedings, including actions brought on behalf of various classes of claimants. In view of the inherent difficulty of predicting the outcome of such matters, the Bank cannot state what the eventual outcome of such matters will be. However, based on current knowledge, management does not believe that liabilities, if any, arising from pending litigation or regulatory proceedings will have a material adverse effect on the Consolidated Statement of Financial Position or results of operations of the Bank.

Legal provisions are established when it becomes probable that the Bank will incur an expense related to a legal action and the amount can be reliably estimated. Such 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. Management and internal and external experts are involved in estimating any amounts that may be required. The actual costs of resolving these claims may vary significantly from the amount of the legal provisions. The Bank's estimate involves significant judgement, given the varying stages of the proceedings, the fact that the Bank's liability, if any, has yet to be determined and the fact that the underlying matters will change from time to time. As such, there is a possibility that the ultimate resolution of those legal actions may be material to the Bank's consolidated results of operations for any particular reporting period.

Furthermore, the Bank and its subsidiaries may be subject to penalties or sanctions imposed by regulatory authorities or enter into settlement agreements with regulatory authorities from time to time. As the Bank and its subsidiaries are subject to numerous regulatory authorities around the world, fees, administrative penalties and sanctions may be categorized differently by each regulator. Any such penalties imposed under these categories against the Bank and its subsidiaries, however, are not material, nor would they likely be considered important to a reasonable investor in making an investment decision, and would include penalties such as late filing fees. 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.[14]

On November 5, 2015, the Bank and its New York Agency entered a written agreement (the "Agreement") with the Federal Reserve Bank of New York and the New York State Department of Financial Services relating to the New York Agency's Bank Secrecy Act/Anti-Money Laundering Program. The Bank has committed significant resources to addressing the findings in the Agreement and continues enhancing its Bank Secrecy Act/anti-money laundering and sanctions program.

INTEREST OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS

To the best of the Bank's knowledge, the Bank confirms that there are no directors or executive officers or any associate or affiliate of a director or executive officer with a material interest in any transaction within the three most recently completed financial years or during the current financial year that has materially affected or will materially affect the Bank.

[14] National Instrument 14-101 limits the meaning of "securities legislation" to Canadian provincial and territorial legislation and "securities regulatory authority" to Canadian provincial and territorial securities regulatory authorities.

TRANSFER AGENT AND REGISTRAR

Computershare Trust Company of Canada is the Bank's transfer agent and registrar at the following addresses: Computershare Trust Company of Canada, 100 University Avenue, 8th Floor, Toronto, Ontario, M5J 2Y1 and Computershare Trust Company N.A., 250 Royall Street, Canton, Massachusetts, 02021, U.S.

CONFLICTS OF INTEREST

To the knowledge of the Bank, no director or executive officer of the Bank has an existing or potential material conflict of interest with the Bank or any of its subsidiaries.

EXPERTS

The Bank's Shareholders' Auditors are KPMG LLP, Bay Adelaide Centre, 333 Bay Street, Suite 4600, Toronto, Ontario, M5H 2S5. KPMG LLP is independent of the Bank within the meaning of the Rules of Professional Conduct / Code of Ethics of various Canadian provincial institutes/ordre and within the meaning of the relevant rules and related interpretations prescribed by the relevant professional bodies and any applicable legislation or regulation.

THE BANK'S AUDIT AND CONDUCT REVIEW COMMITTEE

A copy of the Bank's Audit and Conduct Review Committee charter is attached to this AIF as Schedule C and can also be found on the Bank's website at www.scotiabank.com in the Corporate Governance section.

The following directors are members of the Audit and Conduct Review Committee as of November 27, 2018: Una M. Power (Chair and financial expert), Scott B. Bonham, Charles H. Dallara, Tiff Macklem, Thomas C. O'Neill, Michael D. Penner; L. Scott Thomson and Benita Warmbold. All of the members of the Committee are financially literate and independent as defined by Canadian and United States securities law. The Bank's Board of Directors has designated each of Thomas C. O'Neill, Una M. Power, L. Scott Thomson and Benita M. Warmbold as an 'audit committee financial expert', as that term is defined by United States securities laws.

The education and related experience (as applicable) of each Audit and Conduct Review Committee member is described below.

Una M. Power (Chair) **–** Ms. Power is corporate director and the former Chief Financial Officer of Nexen Energy ULC, a former publicly-traded energy company that is a wholly-owned subsidiary of CNOOC Limited. During her 24 year career with Nexen, Ms. Power held various executive positions with responsibility for financial and risk management, strategic planning and budgeting, business development, energy marketing and trading, information technology and capital investment. Ms. Power holds a B.Comm. (Honours) from Memorial University and CPA, CA and CFA designations. She has completed executive development programs at Wharton Business School and INSEAD.

Scott B. Bonham – Mr. Bonham is a corporate director and the co-founder of Intentional Capital, a privately held real estate asset management company. Mr. Bonham is also an active board member of the C100, an association that connects Canadian entrepreneurs and companies with its Silicon Valley network. From 2000 to 2015, he was co-founder of GGV Capital, an expansion stage venture capital firm with investments in the U.S. and China. Prior to GGV Capital, he served as Vice President of the Capital Group Companies, where he managed technology investments across several mutual funds from 1996 to 2000. Mr. Bonham has a B.Sc. (in electrical engineering) from Queen's University and a M.B.A. from Harvard Business School.

Charles H. Dallara – Dr. Dallara is the Chairman of the Americas and a member of the Board of Directors of Partners Group Holding AG, based in New York. He has 42 years of industry experience. Prior to joining Partners Group in 2013, Dr. Dallara was the Managing Director and Chief Executive Officer of the Institute of International Finance Inc., a global association of financial institutions from 1993 to 2013. Previously, he was a Managing Director at J.P. Morgan & Co. In addition, Dr. Dallara has held senior positions in the U.S. Department of the Treasury and with the IMF. He holds a bachelor's degree in Economics from the University of South Carolina, a M.A., an M.A.L.D. (in Law & Diplomacy) and a Ph.D. from the Fletcher School of Law and Diplomacy at Tufts University.

Tiff Macklem – Dr. Macklem is Dean of the Rotman School of Management at the University of Toronto. Previously, he served as Senior Deputy Governor and Chief Operating Officer of the Bank of Canada (from July 2010 to May 2014). Prior to his appointment at the Bank of Canada, Dr. Macklem served as Associate Deputy Minister of the federal Department of Finance and Canada's finance deputy at the G7 and G20. He also served as Chair of the Standing Committee on Standards Implementation of the Financial Stability Board. Dr. Macklem holds a B.A. (Honours) in Economics from Queen's University, and a M.A. and a Ph.D. in Economics from the University of Western Ontario.

Thomas C. O'Neill – Mr. O'Neill is a Chairman of the Board of the Bank. He is the retired Chair of the Board of PwC Consulting. He was formerly Chief Executive Officer of PwC Consulting, Chief Operating Officer of PricewaterhouseCoopers LLP, Global, Chief Executive Officer of PricewaterhouseCoopers LLP, Canada and Chair of the Board and Chief Executive Officer of Price Waterhouse Canada. He holds a B.Comm. from Queen's University and is a chartered accountant and a Fellow of the Institute of Chartered Accountants of Ontario ("CPA Ontario"). In September 2013, Mr. O'Neill received the ICAO Award of Outstanding Merit from CPA Ontario, which is CPA Ontario's highest honour.

Michael D. Penner – Mr. Penner is a corporate director, and the former Chairman of the Board of Directors of Hydro-Québec. He was the President and Chief Executive Officer of Peds Legwear prior to selling his company to Gildan Activewear Inc. in August 2016. Mr. Penner has been active in his community, on the Board of Directors of ICD Quebec and has served as a member of the Board of Directors of Les Grands Ballets Canadiens de Montréal, Selwyn House School, Hofstra University School of Law and McGill University Football. Mr. Penner holds a Bachelor of Arts degree from McGill University and a Juris Doctor from Hofstra University in New York.

L. Scott Thomson – Mr. Thomson is the President and Chief Executive Officer of Finning International Inc., the world's largest Caterpillar equipment dealer. Prior to joining Finning in 2013, Mr. Thomson was Chief Financial Officer of Talisman Energy Inc. with responsibility for finance, tax, treasury, investor relations, marketing, business development and strategy, planning and performance management from 2008 to 2013. Prior to Talisman, Mr. Thomson held several executive positions with Bell Canada Enterprises from 2003 to 2008 including the role of Executive Vice President, Corporate Development. Prior to Bell, Mr. Thomson was a Vice President at Goldman, Sachs & Co. Mr. Thomson holds a B.A. (in economics and political science) from Queen's University and a M.B.A. from the University of Chicago.

Benita M. Warmbold – Ms. Warmbold is a corporate director, and the former Senior Managing Director and Chief Financial Officer of Canada Pension Plan (CPP) Investment Board. Over her nine years at CPP Investment Board, Ms. Warmbold was responsible for finance, risk, performance, tax, internal audit, legal, technology, data and investment operations. Prior to joining CPP Investment Board in 2008, Ms. Warmbold held senior leadership positions with Northwater Capital, Canada Development Investment Corporation and KPMG. She is a director of the Canadian Public Accountability Board. Ms. Warmbold holds a B. Comm. (Honours) from Queen's University and is a chartered professional accountant and a Fellow of CPA Ontario. Ms. Warmbold has been recognized three times as one of "Canada's Most Powerful Women – Top 100," and in 2016 was inducted into the WXN Hall of Fame.

Shareholders' Auditors

Please refer to Table 76 on page 128 of the MD&A, which is incorporated herein by reference, for disclosure relating to the fees paid by the Bank to the Bank's Shareholders' Auditors, KPMG LLP in each of the last three fiscal years. The nature of these services is described below:

- Audit services generally relate to the statutory audits and review of financial statements, regulatory required attestation reports, as well as services associated with registration statements, prospectuses, periodic reports and other documents filed with securities regulatory bodies or other documents issued in connection with securities offerings.
- Audit-related services include special attest services not directly linked to the financial statements, review of controls and procedures related to regulatory reporting, audits of employee benefit plans and consultation and training on accounting and financial reporting.
- Tax services outside of the audit scope relate primarily to specified review procedures required by local tax authorities, attestation on tax returns of certain subsidiaries as required by local tax authorities, and review to determine compliance with an agreement with the tax authorities.

- Other non-audit services are primarily for the review and translation of English language financial statements into other languages and other services.

The Audit and Conduct Review Committee has adopted policies and procedures (the "Policies") for the pre-approval of services performed by the Bank's Shareholders' Auditors. The objective of the Policies is to specify the scope of services permitted to be performed by the Bank's Shareholders' Auditors and to ensure the independence of the Bank's Shareholders' Auditors is not compromised through engaging them for other services. The Policies state that the Audit and Conduct Review Committee shall pre-approve the following: audit services (all such engagements provided by the Bank's Shareholders' Auditors as well as all such engagements provided by any other registered public accounting firm); and other permitted services to be provided by the Bank's Shareholders' Auditors (primarily audit and audit-related services). The Bank's Shareholders' Auditors shall not be engaged in the provision of tax or other non-audit services, without the pre-approval of the Audit and Conduct Review Committee. The Policies also enumerate pre-approved services including specific audit, audit-related and other limited non-audit services that are consistent with the independence requirements of the U.S. Sarbanes-Oxley Act of 2002, Canadian independence standards for auditors and applicable legal requirements. The Policies are applicable to the Bank, its subsidiaries and entities that are required to be consolidated by the Bank. The Audit and Conduct Review Committee shall review and approve the Policies on at least an annual basis. The Policies do not delegate any of the Audit and Conduct Review Committee's responsibilities to management of the Bank.

ADDITIONAL INFORMATION

Additional information relating to the Bank may be found on the SEDAR website at www.sedar.com and on the SEC's website at www.sec.gov. For a description of Canadian bank resolution powers and the consequent risk factors attaching to certain liabilities of the Bank reference is made to https://www.scotiabank.com/ca/en/about/investors-shareholders/regulatory-disclosures.html. Such information may also be found at www.sedar.com and at www.sec.gov/edgar. Information contained in or otherwise accessible through the websites mentioned in this Annual Information Form does not form a part of this Annual Information Form. All references in this Annual Information Form to websites are inactive textual references and are for your information only. Additional information, including directors' and officers' compensation, indebtedness and options to purchase securities, principal holders of the Bank's securities and interests of insiders in material transactions, where applicable, is contained in the Management Proxy Circular. Additional financial information is provided in the Bank's consolidated financial statements and MD&A for the year ended October 31, 2018. A copy of such documents may be obtained upon request from the Executive Vice-President and General Counsel of the Bank at Scotia Plaza, 44 King Street West, Toronto, Ontario, M5H 1H1.

Schedule A

Principal subsidiaries[1]

The following table presents the major operating subsidiaries the Bank owns, directly or indirectly. All of these subsidiaries are included in the Bank's consolidated financial statements.

As at October 31 ($ millions)	Principal office	Carrying value of shares 2018	2017
Canadian			
1832 Asset Management L.P.	Toronto, Ontario	**$ 1,524**	$ 2,006
BNS Investments Inc.	Toronto, Ontario	**13,870**	13,551
Montreal Trust Company of Canada	Montreal, Quebec		
National Trust Company[2]	Stratford, Ontario	**415**	449
Roynat Inc.	Calgary, Alberta	**432**	239
Scotia Capital Inc.	Toronto, Ontario	**1,391**	1,024
Scotia Dealer Advantage Inc.	Burnaby, British Columbia	**592**	567
Scotia Life Insurance Company	Toronto, Ontario	**219**	189
Scotia Mortgage Corporation	Toronto, Ontario	**588**	615
Scotia Securities Inc.	Toronto, Ontario	**40**	34
Tangerine Bank	Toronto, Ontario	**3,525**	3,488
Jarislowsky, Fraser Limited	Montreal, Quebec	**947**	–
MD Financial Management Inc.	Ottawa, Ontario	**2,612**	–
International			
Scotiabank Colpatria S.A. (formerly Banco Colpatria Multibanca Colpatria S.A.) (51%)[3]	Bogota, Colombia	**1,221**	1,160
The Bank of Nova Scotia Berhad	Kuala Lumpur, Malaysia	**318**	303
The Bank of Nova Scotia International Limited	Nassau, Bahamas	**19,312**	18,223
BNS Asia Limited	Singapore		
The Bank of Nova Scotia Trust Company (Bahamas) Limited	Nassau, Bahamas		
Grupo BNS de Costa Rica, S.A.	San Jose, Costa Rica		
Scotiabank & Trust (Cayman) Ltd.	Grand Cayman, Cayman Islands		
Scotiabank (Bahamas) Limited	Nassau, Bahamas		
Scotiabank (British Virgin Islands) Limited	Road Town, Tortola, B.V.I.		
Scotiabank (Hong Kong) Limited	Hong Kong, China		
Scotiabank (Ireland) Designated Activity Company	Dublin, Ireland		
Scotiabank (Turks and Caicos) Ltd.	Providenciales, Turks and Caicos Islands		
BNS International (Panama) S.A.	Panama City, Panama		
Grupo Financiero Scotiabank Inverlat, S.A. de C.V. (97.4%)	Mexico, D.F., Mexico	**3,901**	3,544
Nova Scotia Inversiones Limitada	Santiago, Chile	**5,100**	3,325
Scotiabank Chile S.A (75.5%)	Santiago, Chile		
Scotia Holdings (US) Inc.[4]	New York, New York		
Scotiabanc Inc.	Houston, Texas		
Scotia Capital (USA) Inc.[4][5]	New York, New York		
Scotia International Limited	Nassau, Bahamas	**635**	642
Scotiabank Anguilla Limited	The Valley, Anguilla		
Scotiabank Brasil S.A. Banco Multiplo	Sao Paulo, Brazil	**386**	223
Scotiabank Caribbean Holdings Ltd.	Bridgetown, Barbados	**1,847**	1,710
Scotia Group Jamaica Limited (71.8%)	Kingston, Jamaica		
The Bank of Nova Scotia Jamaica Limited	Kingston, Jamaica		
Scotia Investments Jamaica Limited	Kingston, Jamaica		
Scotiabank (Belize) Ltd.	Belize City, Belize		
Scotiabank Trinidad and Tobago Limited (50.9%)	Port of Spain, Trinidad and Tobago		
Scotiabank (Panama) S.A.	Panama City, Panama		
Scotiabank Uruguay S.A.	Montevideo, Uruguay	**490**	496
Scotiabank de Puerto Rico	San Juan, Puerto Rico	**1,555**	1,395
Scotiabank El Salvador, S.A. (99.4%)	San Salvador, El Salvador	**686**	659
Scotiabank Europe plc	London, United Kingdom	**2,432**	2,400
Scotiabank Peru S.A.A. (98.05%)	Lima, Peru	**4,877**	4,518

(1) The Bank (or immediate parent of an entity) owns 100% of the outstanding voting shares of each subsidiary unless otherwise noted.
(2) Effective October 29, 2018, National Trustco Inc. was dissolved and National Trust Company is held by the Bank.
(3) Effective June 15, 2018, the name was changed to Scotiabank Colpatria S.A.
(4) The carrying value of this subsidiary is included with that of its parent, BNS Investments Inc.
(5) The carrying value of this subsidiary is included with that of its parent, Scotia Holdings (US) Inc.

Subsidiaries may have a different reporting date from that of the Bank of October 31. Dates may differ for a variety of reasons including local reporting requirements or tax laws. In accordance with the Bank's accounting policies, for the purpose of inclusion in the consolidated financial statements of the Bank, adjustments are made where significant for subsidiaries with different reporting dates.

Schedule B

Moody's

Moody's short-term ratings are assigned to obligations with an original maturity of thirteen 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 indicates that an issuer has 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 "Aa" are judged to be of high quality and are subject to very low credit risk. Obligations rated "A" are judged to be upper-medium grade and are subject to low credit risk. Obligations rated "Baa" are judged to be medium-grade and subject to moderate credit risk and as such may possess certain speculative characteristics. The numerical modifiers 1, 2 and 3 indicate that the obligation ranks in the higher end, mid-range or lower end, respectively, of that generic rating category.

Additionally, a *(hyb)* indicator is appended to all ratings of hybrid securities issued by banks, insurers, finance companies, and securities firm.

The Moody's rating outlook is an opinion regarding the likely rating direction over the medium term. The "Stable" outlook indicates a low likelihood of a rating change over the medium term.

S&P

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" is rated in the highest category and indicates S&P's view that an obligor'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 S&P Global Ratings' analysis of the following considerations: likelihood of payment—capacity and willingness of the obligor to meet its financial commitment on an obligation in accordance with the terms of the obligation; nature of and provisions of the obligation, and the promise they impute; and protection afforded by, and relative position of, the 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.

An S&P Global Ratings 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. There is a direct correspondence between the specific ratings assigned on the Canadian preferred share scale and the various rating levels on the global debt rating scale of S&P Global Ratings. 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. It is the practice of S&P Global Ratings 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. A reference to "high" or "low" reflects the relative strength within the rating category, and the absence of either a "high" or "low" designation indicates the rating is in the middle of the category.

An S&P Global Ratings 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 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.

Fitch

A short-term issuer or obligation rating is based in all cases 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 deposit ratings may be adjusted for loss severity. Short-Term Ratings are assigned to obligations whose initial maturity is viewed as “short term” based on market convention. A rating of “F1+” denotes the highest short-term credit quality, indicating the strongest intrinsic capacity for the timely payment of financial commitments. The added “+” denotes an exceptionally strong credit feature.

Long-term credit ratings are used as a benchmark measure of probability of default and are formally described as an Issuer Default Rating (“IDR”). IDRs opine on an entity’s relative vulnerability to default (including by way of a distressed debt exchange) 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 levels, Fitch further differentiates the rankings by adding 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. They reflect financial or other trends that have not yet reached or been sustained the level that would cause a rating action, but which may do so if such trends continue. The “Stable” rating outlook means that the rating is not likely to change over a one-to-two year period.

DBRS

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. Ratings are based on quantitative and qualitative considerations
relevant to the issuer, and the relative ranking of claims. 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. Every DBRS rating is based on quantitative and qualitative considerations relevant to the borrowing entity. This scale may also apply to certain hybrid securities, in which case references to dividend throughout will reflect interest commitments of the hybrid security. 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 DBRSs opinion regarding outlook for the rating in question. The “Stable” rating trend represents an indication that there is less likelihood that the rating could change in the future than would be the case if the rating trend was “Negative”.

Schedule C

CHARTER

AUDIT AND CONDUCT REVIEW COMMITTEE OF THE BOARD OF DIRECTORS OF

THE BANK OF NOVA SCOTIA

The Audit and Conduct Review Committee of the Board of Directors (the "Committee") has the responsibilities and duties as outlined below:

AUDIT

A. Mandate

1. To perform such duties as may be required by:
   - the *Bank Act* (the "Bank Act"), the regulations thereunder and guidelines of the Office of the Superintendent of Financial Institutions Canada ("OSFI"); and
   - other applicable legislation and regulations, including those of the Ontario Securities Commission and the Canadian Securities Administrators, the Toronto Stock Exchange, the New York Stock Exchange ("NYSE"), the Securities and Exchange Commission and the *Sarbanes-Oxley Act, 2002*,

   as more fully described under the heading "**Duties**" below.
2. To assist the Board of Directors (the "Board") in fulfilling its oversight responsibilities for:
   - the integrity of the Bank's consolidated financial statements and related quarterly results releases;
   - the system of internal control, including internal control over financial reporting and disclosure controls and procedures ("internal controls");
   - the external auditor's qualifications, independence and performance; and
   - the Bank's finance and internal audit functions.
3. To perform such other duties as may from time to time be assigned to the Committee by the Board.
4. To act as the audit committee for any federally chartered Canadian financial institution beneficially owned by the Bank as determined by the Board.

B. Authority

The Committee has authority to:

- conduct or authorize investigations into any matters within its scope of responsibility;
- retain, as appropriate and at the Bank's expense, independent counsel, accountants or others to advise the Committee or assist in the conduct of an investigation;
- meet with Bank officers, the external auditor or outside counsel, as necessary;
- determine appropriate funding for independent advisors;
- communicate directly with the internal and external auditors;
- receive all material correspondence between the external auditor and management related to audit and interim review findings; and
- call a meeting of the Board to consider any matter of concern to the Committee.

C. Duties

The Committee shall:

Financial Information

- review the quarterly and annual consolidated financial statements of the Bank prior to approval by the Board and disclosure to the public, and satisfy itself that the financial statements present fairly the financial position, results of operations and cash flows of the Bank;
- review should include discussion with management and the external auditor of significant issues, including significant accounting policies, regarding the financial results, accounting principles, practices and management estimates and judgments;
- satisfy itself that the Bank's accounting practices are prudent and appropriate;
- review the quarterly and annual Management's Discussion & Analysis of Financial Condition and Results of Operations ("MD&A") prior to review and approval by the Board;
- review any material proposed changes in accounting standards and securities policies or regulation relevant to the Bank's consolidated financial statements and approve any material changes in accounting policies related to the Bank's consolidated financial statements;
- review any tax matters material to the financial statements;
- be satisfied that adequate procedures are in place for the review of the Bank's public disclosure of all consolidated financial statements, related quarterly results press releases and financial information extracted or derived from the Bank's consolidated financial statements and periodically assess the adequacy of these procedures;
- review material financial press releases prior to public disclosure;
- review earnings press releases, as well as financial information and earnings guidance provided to analysts and rating agencies prior to public disclosure;
- review investments and transactions that could adversely affect the well-being of the Bank brought to its attention by the external auditor or by any officer of the Bank;
- discuss significant financial risk exposures and the steps management of the Bank has taken to monitor, control and report such exposures;
- review the Annual Information Form and Form 40-F; and
- review the process relating to and the certifications of the Chief Executive Officer and the Chief Financial Officer on the integrity of the Bank's quarterly and annual consolidated financial statements.

Internal Controls

- require Bank management to implement and maintain appropriate internal control procedures including anti-fraud controls and review, evaluate and approve these procedures, including the Bank's Internal Control Policy, as part of the Bank's overall internal control framework;
- receive and review reports from management and internal audit on the design and operating effectiveness of the internal control framework and any significant control breakdowns, including any reports concerning significant deficiencies and material weaknesses in the design or operation of internal controls which are reasonably likely to adversely affect the Bank's ability to record, process, summarize and report financial information, and any fraud involving management or other employees who have a significant role in the Bank's internal controls;
- as part of this review, the Committee should discuss with management whether any deficiencies identified may be systemic or pervasive;
- receive and review the external auditor's audit report on the Bank's internal controls over financial reporting as of the Bank's year end; and
- require management to establish procedures and review and approve the procedures established for the receipt, retention, treatment and resolution of complaints received by the Bank regarding accounting, internal accounting controls or auditing matters, including confidential, anonymous submissions from employees, as part of the Bank's Whistleblower Policy and Procedures, and carry out the Committee's responsibilities under the Bank's Whistleblower Policy and Procedures, as required.

Finance Function

- oversee the Finance Department, having regard to its independence, by:

- reviewing and approving the appointment and/or removal of the Chief Financial Officer of the Bank;
- annually reviewing and approving the mandate of the Chief Financial Officer and the charter of the Finance Department;
- annually reviewing and approving the organizational structure of the Finance Department;
- annually reviewing and approving the Finance Department's resources and budget;
- annually assessing the effectiveness of the Chief Financial Officer and the effectiveness of the Finance Department, and annually approving the performance review of the Chief Financial Officer, taking into consideration any regulatory findings with respect to the finance function;
- conveying its views to the Human Resources Committee on the following matters:
  - the assessment of the effectiveness and performance review of the Chief Financial Officer;
  - considerations to be factored into the total compensation to be paid to the Chief Financial Officer; and
  - succession planning for the role of Chief Financial Officer;
- overseeing that the finance function has unfettered access and a functional reporting line to the Committee;
- periodically requesting independent reviews of the Finance Department, reviewing the results of such reviews and reporting such results to the Board; and
- overseeing that deficiencies identified related to the Finance Department are remedied within an appropriate time frame and reporting to the Board on the progress of necessary corrective actions.

Internal Audit

- review the quarterly and other reports of the Chief Auditor;
- review any matters of significance that arose from non-audit engagements performed by the Audit Department;
- regularly meet with the Chief Auditor with and/or without management, to discuss the effectiveness of the Bank's internal control, risk management (including anti-money laundering) and governance processes;
- oversee the Audit Department, having regard to its independence, by:
  - reviewing and approving the appointment and/or removal of the Chief Auditor;
  - annually reviewing and approving the job description of the Chief Auditor and the charter of the Audit Department;
  - annually reviewing and approving the organizational structure of the Audit Department;
  - annually reviewing and approving the annual audit plan, overall risk assessment methodology, budgets and resources of the Audit Department;
  - annually assessing the effectiveness of the Chief Auditor and the Audit Department, taking into consideration the objectivity and independence of the Bank's internal audit function, and annually approving the performance review of the Chief Auditor, taking into consideration any regulatory findings with respect to the Audit Department;
  - conveying its view to the President and Chief Executive Officer and the Human Resources Committee on the following matters:
    - the assessment of the effectiveness and performance review of the Chief Auditor;
    - considerations to be factored into the total compensation to be paid to the Chief Auditor; and
    - succession planning for the role of Chief Auditor;
  - periodically reviewing results of the internal Quality Assurance and Improvement Program;
  - periodically requesting independent reviews of the Audit Department, reviewing the results of such reviews and reporting such results to the Board;
  - overseeing that deficiencies identified related to the Audit Department are remedied within an appropriate time frame and reporting to the Board on the progress of necessary corrective actions; and
  - advising the Board of any recommendations for the continuous improvement of the Audit Department;
- ensure the Audit Department has a direct and independent reporting line to the Committee;
- provide for an open avenue of communication between the Audit Department and the Board;
- ensure that the Audit Department's recommendations are adequately considered and acted on, by providing the Audit Department with the authority to follow-up on observations and recommendations; and
- review and approve the Internal Audit Third Party Risk Management Policy.

External Auditor

- have responsibility for the oversight of the external auditor who reports directly to the Committee;
- recommend to the Board the retention or termination of the Bank's external auditor, subject to shareholder ratification;
- review and approve the annual audit plan and letter(s) of engagement, and as part of such review, satisfy itself that the Bank's audit plan is risk based and covers all relevant activities over a measurable cycle;
- annually review the external auditor's opinion on the annual financial statements;
- review and evaluate the external auditor's qualifications, performance and independence, including a review and evaluation of the lead audit partner, taking into consideration the opinions of management and the Bank's Audit Department in such evaluation and any concerns raised by OSFI or other stakeholders about the external auditor's independence;
- consistent with the Committee's annual assessment and periodic comprehensive review of the external auditors, the Committee shall establish a policy that stipulates the criteria for the Bank tendering the contract for the role of the Bank's external auditor;
    - as part of this policy and any review undertaken by the Committee, the Committee should periodically consider whether to put the external auditor contract out for tender, taking into consideration the length of the current external auditor's tenure and the risks that tenure may pose to the external auditor's objectivity and independence;
- review the CPAB's annual public report, along with any notices required to be communicated by the external auditor to the Committee, including those required by CPAB, OSFI and PCAOB;
- review and recommend to the Board the annual fee for the audit of the Bank's consolidated financial statements;
    - as part of this review, the Committee should satisfy itself that the level of audit fees is commensurate with the scope of work undertaken;
- review and pre-approve in accordance with established pre-approval policy, all services to be provided by the external auditor, including audit and audit related services and permitted tax and non-audit services;
- delegate the authority to pre-approve non-audit services to a member of the Committee;
- review external auditor services pre-approved by the delegate of the Committee;
- review annually the total fees paid to the external auditor by required categories;
- at least annually, obtain and review reporting from the external auditor describing:
    - the firm's internal quality-control procedures;
    - any material issues raised by the most recent internal quality-control review, or peer review, of the firm, or by any inquiry or investigation by governmental or professional authorities, within the preceding five years, regarding one or more independent audits carried out by the firm, and any steps taken to deal with any such issues;
    - the skill and resources (amount and type) of the firm; and
    - an assessment of all relationships between the external auditor and the Bank that pertain to independence;
- review the rotation plan for partners on the engagement;
- meet with the external auditor and with management to discuss the quarterly and the annual consolidated financial statements and the Bank's disclosure under any MD&A;
- review with management and the external auditor all matters required to be communicated to the Committee under generally accepted auditing standards;
- review with the external auditor any audit problems or difficulties and management's response;
- discuss with the external auditor the OSFI returns, investments or transactions reviewed by the Committee;
- resolve any disputes between the external auditor and management; and
- review and approve policies for the Bank's employment of current and former employees or partners of the current or former external auditor.

Other Duties

- receive reports from management on the Bank's compliance with legal and regulatory requirements;
- review the periodic reports on litigation matters;
- review such returns as specified by OSFI;

- provide for an open avenue of communication between internal audit, the external auditor and the Board;
- annually, review the charter for the Committee and evaluate the Committee's effectiveness in fulfilling its mandate;
- prepare a committee report for inclusion in the Bank's management proxy circular; and
- institute and oversee special investigations as needed.

CONDUCT REVIEW

D. Mandate

1. To perform the duties with respect to the Bank's procedures for ensuring its transactions with its related parties comply with Part XI of the Bank Act and any regulations thereunder as more fully described under the heading "**Duties**" below.
2. In the event a widely held bank holding company or insurance holding company has a significant interest in any class of shares of the Bank:
   - to establish policies for entering into transactions referred to in subsection 495.1(1) of the Bank Act, including transactions with a holding company or any other related party of the Bank that is an entity in which the holding company has a substantial investment; and
   - to review certain of the Bank's transactions that are referred to in subsection 495.3(1) of the Bank Act including any transaction with a widely held insurance or bank holding company or any other related party in which they hold a substantial investment.
3. To perform such duties as are required by the Bank Act to be dealt with by a committee of the Board concerning the monitoring of adherence to procedures for identifying potential conflicts of interest and for resolving such conflicts of interest, for restricting the use of confidential information, for providing disclosure of information to customers and for dealing with customer complaints as required under subsection 455(1) of the Bank Act, and as more fully described under the heading "**Duties**" below.
4. To assist the Board in fulfilling its oversight responsibilities for:
   - setting standards of conduct and ethical behaviour; and
   - the oversight of conduct review and conduct risk.
5. To perform such other duties as are required under the Bank Act or by OSFI, or as may from time to time be assigned by the Board.
6. To monitor and fulfill the compliance requirements of the Bank in respect of the Financial Consumer Agency of Canada.
7. To act as the conduct review committee for any federally chartered Canadian financial institution beneficially owned by the Bank as determined by the Board.

E. Duties

1. Establish criteria for determining whether the value of transactions with related parties of the Bank is nominal or immaterial to the Bank;
2. Approve the terms and conditions of:
   - loans, other than margin loans, to senior officers of the Bank on terms and conditions more favourable to the senior officers than those offered to the public; and
   - loans to spouses of senior officers of the Bank on the security of mortgages of the principal residences of such spouses on terms and conditions more favourable than those offered to the public;

3. Approve the practice of the Bank making financial services, other than loans or guarantees, available to senior officers of the Bank or to spouses, or children who are less than 18 years of age of senior officers of the Bank, on terms and conditions more favourable than those offered to the public, provided the financial services are offered by the Bank to its employees on those favourable terms and conditions;
4. Require Bank management to establish procedures to enable the Bank to verify that its transactions with related parties of the Bank comply with Part XI of the Bank Act and to review those procedures and their effectiveness. These procedures should, among other things, enable management to verify that:
    - all related party transactions are on terms and conditions at least as favourable to the Bank as market terms and conditions, other than transactions referred to in clauses 2 and 3 above;
    - loans to full-time senior officers, other than margin loans and mortgages on their principal residences, do not exceed the greater of twice their annual salaries and $100,000;
    - aggregate loans or guarantees to, and investments in the securities of any related party (subject to certain exceptions) do not exceed 2% of the Bank's regulatory capital unless the approval of 2/3 of the Board has been obtained; and
    - aggregate loans or guarantees to, and investments in the securities of all related parties (subject to certain exceptions) do not exceed 50% of the Bank's regulatory capital;
5. Review the practices of the Bank to identify any transactions with related parties of the Bank that may have a material effect on the stability or solvency of the Bank;
6. Monitor the procedures established by the Board to resolve conflicts of interest, including techniques for the identification of potential conflict situations, and to restrict the use of confidential information;
7. Monitor the procedures established by the Board to provide disclosure to customers of the Bank of information that is required to be disclosed by the Bank Act, and for dealing with and reporting complaints made by customers of the Bank who have requested or received products or services in Canada and to satisfy itself that these procedures are being adhered to by the Bank;
8. Review the Conduct Risk Summary Framework, prior to review and approval by the Board;
9. Review and, if appropriate, recommend for Board approval the Bank's Code of Conduct which includes the standards of business conduct and ethical behaviour for employees, officers and directors of the Bank and its subsidiaries and recommend for approval by the Board any exceptions from the Bank's Code of Conduct , as appropriate;
10. Review reports from Global Compliance on compliance with the Bank's Code of Conduct and any instances of material deviation therefrom with corrective actions taken;
11. Review the annual letter of certification from the Chief Executive Officer on the Bank's compliance with the Code of Conduct;
12. Review and, if appropriate, approve the Anti-corruption and Anti-bribery Policy;
13. Monitor the Bank's exposure to material conduct risk and review the Bank's conduct risk management practices including its identification, measurement, monitoring and assessment of conduct risk;
14. Review reports to the Committee relating to conduct risk;
15. Review with management the results of their assessment of the Bank's conduct risk and their plans to remediate any material deficiencies identified; and
16. Monitor the procedures established by the Bank to mitigate conduct risk.

COMMITTEE OPERATIONS

F. Reporting

After each meeting of the Committee, the Committee is required to report to the Board on matters reviewed by the Committee. The Committee shall also report as required to the Risk Committee on relevant issues.

The Chair of the Committee shall review, for completeness, the Board's report to OSFI with respect to conduct review matters on the Committee's activities during the year. This report must be filed within 90 days after the Bank's financial year-end.

The Committee shall review and assess the adequacy of this Charter on an annual basis and report the results of this review to the Corporate Governance Committee of the Board.

G. Composition

Structure

The Committee shall consist of a minimum of 3 Directors. No member of the Committee may serve on more than three audit committees of public company boards without the consent of the Corporate Governance Committee and the Board.

Each member must be financially literate or become financially literate within a reasonable period of time subsequent to his/her appointment to the Committee. At least one member must be a financial expert. There should also be a reasonable representation of other key competencies on the Committee, as determined by the Corporate Governance Committee.

Independence

The Committee is composed entirely of independent directors as defined in applicable laws, rules and regulations and as determined pursuant to the Director Independence Standards approved by the Board for Committee members.

No member of the Committee may be an officer or employee of the Bank or of any of its subsidiaries or affiliates. No member may be a person who is affiliated with the Bank.

Directors' fees are the only compensation a member of the Committee may be paid by the Bank.

Appointment of Committee Members

Members of the Committee are appointed or reappointed annually by the Board, upon the recommendation of the Corporate Governance Committee, such appointments to take effect immediately following the annual meeting of the shareholders of the Bank. Members of the Committee shall hold office until their successors are appointed, or until they cease to be Directors of the Bank.

Vacancies

Vacancies may be filled for the remainder of the current term of appointment of members of the Committee by the Board, subject to the requirements under the headings "Structure" and "Independence" above.

Appointment and Qualifications of Committee Chair

The Board shall appoint from the Committee membership, a Chair for the Committee to preside at meetings. In the absence of the Chair, one of the other members of the Committee present shall be chosen by the Committee to preside at that meeting.

The Chair for the Committee must have all of the qualifications for Committee membership and have accounting or related financial management expertise.

H. Meetings

Calling of Meetings

Meetings of the Committee may be called by the Chair, by any two members of the Committee or the external auditor. Members may participate in meetings in person or by telephone, electronic or other communications facilities.

Written resolutions in lieu of a meeting are permitted, solely in accordance with the Bank Act.

The Committee shall hold an in camera session immediately prior to and/or following the conclusion of the regular agenda matters. The Committee shall also hold in camera sessions, separately at each Committee meeting, with each of the Chief Financial Officer, Chief Auditor and the external auditor. The Committee shall also meet separately, at least quarterly, with management.

To facilitate communication between the Committee and the Risk Committee, the Chair of the Risk Committee shall receive notice of all Committee meetings and may attend Committee meetings by invitation as a non-voting observer.

The Committee may invite any director, officer or employee or any other person to attend meetings to assist the Committee with its deliberations.

Notice of Meetings

Notice of meeting of the Committee shall be sent by prepaid mail, by personal delivery or other means of transmitted or recorded communication or by telephone at least 12 hours before the meeting to each member of the Committee at the member's address or communication number last recorded with the Corporate Secretary. A Committee member may in any manner waive notice of a meeting of the Committee and attendance at a meeting is a waiver of notice of the meeting, except where a member attends for the express purpose of objecting to the transaction of any business on the ground that the meeting is not lawfully called.

Notice to the Internal Auditor and External Auditor

The Chief Auditor and the external auditor are entitled to receive notice of every meeting of the Committee and, at the expense of the Bank, to attend and be heard at each meeting and to have the opportunity to discuss matters with the independent directors, without the presence of management.

Frequency

The Committee shall meet at least quarterly.

Quorum

The quorum for a meeting of the Committee shall be a majority of its members, subject to a minimum of 2 members.

Secretary and Minutes

The Corporate Secretary or, in the absence of the Corporate Secretary, an Assistant Corporate Secretary of the Bank shall act as Secretary of the Committee.

Minutes of meetings of the Committee shall be recorded and maintained by the Corporate Secretary and subsequently presented to the Committee and to the Board, if required by the Board.

This Charter was last reviewed and approved by the Board on June 26, 2018.

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FORWARD LOOKING STATEMENTS

From time to time, our public communications often include oral or written 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. In addition, representatives of the Bank may include forward-looking statements orally to analysts, investors, the media and others. All such statements are made pursuant to the "safe harbor" provisions of the U.S. Private Securities Litigation Reform Act of 1995 and any applicable Canadian securities legislation. Forward-looking statements may include, but are not limited to, statements made in this document, the Management's Discussion and Analysis in the Bank's 2018 Annual Report under the headings "Outlook" and in other statements regarding the Bank's objectives, strategies to achieve those objectives, the regulatory environment in which the Bank operates, anticipated financial results, and the outlook for the Bank's businesses and for the Canadian, U.S. and global economies. Such statements are typically identified by words or phrases such as "believe," "expect," "foresee," "forecast," "anticipate," "intend," "estimate," "plan," "goal," "project," and similar expressions of future or conditional verbs, such as "will," "may," "should," "would" and "could."

By their very nature, forward-looking statements require us to make assumptions and are subject to inherent risks and uncertainties, which give rise to the possibility that our predictions, forecasts, projections, expectations or conclusions will not prove to be accurate, that our assumptions may not be correct and that our financial performance objectives, vision and strategic goals will not be achieved.

We caution readers not to place undue reliance on these statements as a number of risk factors, many of which are beyond our control and effects of which can be difficult to predict, could cause our actual results to differ materially from the expectations, targets, estimates or intentions expressed in such 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; changes in currency and interest rates; increased funding costs and market volatility due to market illiquidity and competition for funding; the failure of third parties to comply with their obligations to the Bank and its affiliates; changes in monetary, fiscal, or economic policy and tax legislation and interpretation; changes in laws and regulations or in supervisory expectations or requirements, including capital, interest rate and liquidity requirements and guidance, and the effect of such changes on funding costs; changes to our credit ratings; operational and infrastructure risks; reputational risks; the accuracy and completeness of information the Bank receives on customers and counterparties; the timely development and introduction of new products and services; our ability to execute our strategic plans, including the successful completion of acquisitions and dispositions, including obtaining regulatory approvals; critical accounting estimates and the effect of changes to accounting standards, rules and interpretations on these estimates; global capital markets activity; the Bank's ability to attract, develop and retain key executives; the evolution of various types of fraud or other criminal behaviour to which the Bank is exposed; disruptions in or attacks (including cyber-attacks) on the Bank's information technology, internet, network access, or other voice or data communications systems or services; increased competition in the geographic and in business areas in which we operate, including through internet and mobile banking and non-traditional competitors; exposure related to significant litigation and regulatory matters; the occurrence of natural and unnatural catastrophic events and claims resulting from such events; and the Bank's anticipation of and success in managing the risks implied by the foregoing. A substantial amount of the Bank's business involves making loans or otherwise committing resources to specific companies, industries or countries. Unforeseen events affecting such borrowers, industries or countries could have a material adverse effect on the Bank's financial results, businesses, financial condition or liquidity. These and other factors may cause the Bank's actual performance to differ materially from that contemplated by forward-looking statements. The Bank cautions that the preceding list is not exhaustive of all possible risk factors and other factors could also adversely affect the Bank's results, for more information, please see the "Risk Management" section of the Bank's 2018 Annual Report, as may be updated by quarterly reports.

Material economic assumptions underlying the forward-looking statements contained in this document are set out in the 2018 Annual Report under the headings "Outlook", as updated by quarterly reports. The "Outlook" sections are based on the Bank's views and the actual outcome is uncertain. Readers should consider the above-noted factors when reviewing these sections. When relying on forward-looking statements to make decisions with respect to the Bank and its securities, investors and others should carefully consider the preceding factors, other uncertainties and potential events.

Any forward-looking statements contained in this document represent the views of management only as of the date hereof and are presented for the purpose of assisting the Bank's shareholders and analysts in understanding the Bank's financial position, objectives and priorities, and anticipated financial performance as at and for the periods ended on the dates presented, and may not be appropriate for other purposes. Except as required by law, the Bank does not undertake to update any forward-looking statements, whether written or oral, that may be made from time to time by or on its behalf.

Additional information relating to the Bank, including the Bank's Annual Information Form, can be located on the SEDAR website at www.sedar.com and on the EDGAR section of the SEC's website at www.sec.gov.

November 27, 2018

MANAGEMENT'S DISCUSSION & ANALYSIS

The Management's Discussion and Analysis (MD&A) is provided to enable readers to assess the Bank's financial condition and results of operations as at and for the year ended October 31, 2018. The MD&A should be read in conjunction with the Bank's 2018 Consolidated Financial Statements, including the Notes. This MD&A is dated November 27, 2018.

Additional information relating to the Bank, including the Bank's 2018 Annual Report, are available on the Bank's website at www.scotiabank.com. As well, the Bank's 2018 Annual Report and Annual Information Form are available on the SEDAR website at www.sedar.com and on the EDGAR section of the SEC's website at www.sec.gov.

Non-GAAP Measures

The Bank uses a number of financial measures to assess its performance. Some of these measures are not calculated in accordance with Generally Accepted Accounting Principles (GAAP), which are based on International Financial Reporting Standards (IFRS), are not defined by GAAP and do not have standardized meanings that would ensure consistency and comparability among companies using these measures. The Bank believes that certain non-GAAP measures are useful in assessing ongoing business performance and provide readers with a better understanding of how management assesses performance. These non-GAAP measures are used throughout this report and defined below.

Adjusted results and diluted earnings per share

The following tables present reconciliations of GAAP Reported financial results to Non-GAAP Adjusted financial results. The financial results have been adjusted for the following:

1.Acquisition-related costs – In 2018, the Bank acquired the following: Jarislowsky, Fraser Limited, and MD Financial Management in Canadian Banking; and BBVA Chile and Citibank consumer and small and medium enterprise operations, Colombia in International Banking. Acquisition-related costs are defined below.

- Day 1 provision for credit losses on acquired performing financial instruments, as required by IFRS 9. The standard does not differentiate between originated and purchased performing loans and as such, requires the same accounting treatment for both.
- Integration costs – These include costs that are incurred on the current year's acquisitions and related to integrating the acquired operations and will not form part of continuing operations once integration is complete.
- Amortization of acquisition-related intangible assets, excluding software, relating to current and past acquisitions.

2.Restructuring charge incurred in 2016.

T1 Reconciliation of reported and adjusted results and diluted earnings per share

As at October 31 ($ millions)	2018	2017	2016
Reported Results			
Net interest income	**$ 16,191**	$ 15,035	$ 14,292
Non-interest income	**12,584**	12,120	12,058
Total revenue	**28,775**	27,155	26,350
Provision for credit losses	**2,611**	2,249	2,412
Non-interest expenses	**15,058**	14,630	14,540
Income before taxes	**11,106**	10,276	9,398
Income tax expense	**2,382**	2,033	2,030
Net income	**$ 8,724**	$ 8,243	$ 7,368
Net income attributable to non-controlling interests in subsidiaries (NCI)	**176**	238	251
Net income attributable to equity holders	**8,548**	8,005	7,117
Net income attributable to common shareholders	**8,361**	7,876	6,987
Diluted earnings per share *(in dollars)*	**$ 6.82**	$ 6.49	$ 5.77
Adjustments			
Acquisition-related costs			
Day 1 provision for credit losses on acquired performing financial instruments (1)	**$ 404**	$ –	$ –
Integration costs(2)	**101**	–	–
Amortization of acquisition-related intangible assets, excluding software (2)	**86**	82	104
Acquisition-related costs (Pre-tax)	**591**	82	104
Restructuring charge			
Restructuring charge (Pre-tax)(2)	**–**	–	378
Adjustments (Pre-tax)	**591**	82	482
Income tax expense	**171**	22	128
Adjustments (After tax)	**420**	60	354
Adjustment attributable to NCI	**122**	–	–
Adjustments (After tax and NCI)	**$ 298**	$ 60	$ 354
Adjusted Results			
Net interest income	**$ 16,191**	$ 15,035	$ 14,292
Non-interest income	**12,584**	12,120	12,058
Total revenue	**28,775**	27,155	26,350
Provision for credit losses	**2,207**	2,249	2,412
Non-interest expenses	**14,871**	14,548	14,058
Income before taxes	**11,697**	10,358	9,880
Income tax expense	**2,553**	2,055	2,158
Net income	**$ 9,144**	$ 8,303	$ 7,722
Net income attributable to NCI	**298**	238	251
Net income attributable to equity holders	**8,846**	8,065	7,471
Net income attributable to common shareholders	**8,659**	7,936	7,341
Adjusted diluted earnings per share			
Adjusted net income attributable to common shareholders	**$ 8,659**	$ 7,936	$ 7,341
Dilutive impact of share-based payment options and others	**72**	59	83
Adjusted net income attributable to common shareholders (diluted)	**$ 8,731**	$ 7,995	$ 7,424
Weighted average number of basic common shares outstanding *(millions)*	**1,213**	1,203	1,204
Dilutive impact of share-based payment options and others *(millions)*	**16**	20	22
Adjusted weighted average number of diluted common shares outstanding *(millions)*	**1,229**	1,223	1,226
Adjusted diluted earnings per share *(in dollars)*	**$ 7.11**	$ 6.54	$ 6.05
Impact of adjustments on diluted earnings per share *(in dollars)*	**$ 0.29**	$ 0.05	$ 0.28

(1) Recorded in provision for credit losses.
(2) Recorded in non-interest expenses.

T2 Reconciliation of reported and adjusted results and diluted earnings per share by business line

Canadian Banking(1)

As at October 31 ($ millions)	2018	2017	2016
Reported Results			
Net interest income	**$ 7,898**	$ 7,363	$ 7,024
Non-interest income	**5,452**	5,488	5,164
Total revenue	**13,350**	12,851	12,188
Provision for credit losses	**794**	913	832
Non-interest expenses	**6,654**	6,487	6,324
Income before taxes	**5,902**	5,451	5,032
Income tax expense	**1,538**	1,387	1,296
Net income	**$ 4,364**	$ 4,064	$ 3,736
Net income attributable to non-controlling interests in subsidiaries (NCI)	**–**	–	–
Net income attributable to equity holders	**$ 4,364**	$ 4,064	$ 3,736
Adjustments			
Acquisition-related costs			
Day 1 provision for credit losses on acquired performing financial instruments (2)	**$ –**	$ –	$ –
Integration costs(3)	**31**	–	–
Amortization of acquisition-related intangible assets, excluding software (3)	**40**	35	54
Acquisition-related costs (Pre-tax)	**71**	35	54
Income tax expense	**19**	9	15
Adjustments for Acquisition-related costs (After tax)	**52**	26	39
Adjustment attributable to NCI	**–**	–	–
Adjustments for Acquisition-related costs (After tax and NCI)	**$ 52**	$ 26	$ 39
Adjusted Results			
Net interest income	**$ 7,898**	$ 7,363	$ 7,024
Non-interest income	**5,452**	5,488	5,164
Total revenue	**13,350**	12,851	12,188
Provision for credit losses	**794**	913	832
Non-interest expenses	**6,583**	6,452	6,270
Income before taxes	**5,973**	5,486	5,086
Income tax expense	**1,557**	1,396	1,311
Net income	**$ 4,416**	$ 4,090	$ 3,775
Net income attributable to NCI	**–**	–	–
Net income attributable to equity holders	**$ 4,416**	$ 4,090	$ 3,775

(1) Refer to Business Line Overview on page 38.
(2) Recorded in provision for credit losses.
(3) Recorded in non-interest expenses.

T2 Reconciliation of reported and adjusted results and diluted earnings per share by business line

International Banking(1)

As at October 31 ($ millions)	2018	2017	2016
Reported Results			
Net interest income	**$ 7,322**	$ 6,726	$ 6,359
Non-interest income	**4,111**	3,688	3,482
Total revenue	**11,433**	10,414	9,841
Provision for credit losses	**1,867**	1,294	1,281
Non-interest expenses	**6,111**	5,664	5,523
Income before taxes	**3,455**	3,456	3,037
Income tax expense	**706**	828	707
Net income	**$ 2,749**	$ 2,628	$ 2,330
Net income attributable to non-controlling interests in subsidiaries (NCI)	**176**	238	251
Net income attributable to equity holders	**$ 2,573**	$ 2,390	$ 2,079
Adjustments			
Acquisition-related costs			
Day 1 provision for credit losses on acquired performing financial instruments (2)	**$ 404**	$ –	$ –
Integration costs(3)	**70**	–	–
Amortization of acquisition-related intangible assets, excluding software (3)	**46**	47	50
Acquisition-related costs (Pre-tax)	**520**	47	50
Income tax expense	**152**	13	13
Adjustments for Acquisition-related costs (After tax)	**368**	34	37
Adjustment attributable to NCI	**122**	–	–
Adjustments for Acquisition-related costs (After tax and NCI)	**$ 246**	$ 34	$ 37
Adjusted Results			
Net interest income	**$ 7,322**	$ 6,726	$ 6,359
Non-interest income	**4,111**	3,688	3,482
Total revenue	**11,433**	10,414	9,841
Provision for credit losses	**1,463**	1,294	1,281
Non-interest expenses	**5,995**	5,617	5,473
Income before taxes	**3,975**	3,503	3,087
Income tax expense	**858**	841	720
Net income	**$ 3,117**	$ 2,662	$ 2,367
Net income attributable to NCI	**298**	238	251
Net income attributable to equity holders	**$ 2,819**	$ 2,424	$ 2,116

(1) Refer to Business Line Overview on page 38.
(2) Recorded in provision for credit losses.
(3) Recorded in non-interest expenses.

MANAGEMENT'S DISCUSSION AND ANALYSIS

T2 Reconciliation of reported and adjusted results and diluted earnings per share by business line

Other(1)

As at October 31 ($ millions)	2018	2017	2016
Reported Results			
Net interest income	**$ (483)**	$ (390)	$ (384)
Non-interest income	**(53)**	(344)	273
Total revenue	**(536)**	(734)	(111)
Provision for credit losses	**–**	–	50
Non-interest expenses	**60**	319	653
Income before taxes	**(596)**	(1,053)	(814)
Income tax expense	**(449)**	(786)	(545)
Net income	**$ (147)**	$ (267)	$ (269)
Net income attributable to non-controlling interests in subsidiaries (NCI)	**–**	–	–
Net income attributable to equity holders	**$ (147)**	$ (267)	$ (269)
Adjustments			
Restructuring charge			
Restructuring charge (Pre-tax)(2)	**$ –**	$ –	$ 378
Income tax expense	**–**	–	100
Adjustments (After tax)	**–**	–	278
Adjustment attributable to NCI	**–**	–	–
Adjustments (After tax and NCI)	**$ –**	$ –	$ 278
Adjusted Results			
Net interest income	**$ (483)**	$ (390)	$ (384)
Non-interest income	**(53)**	(344)	273
Total revenue	**(536)**	(734)	(111)
Provision for credit losses	**–**	–	50
Non-interest expenses	**60**	319	275
Income before taxes	**(596)**	(1,053)	(436)
Income tax expense	**(449)**	(786)	(445)
Net income	**$ (147)**	$ (267)	$ 9
Net income attributable to NCI	**–**	–	–
Net income attributable to equity holders	**$ (147)**	$ (267)	$ 9

(1) Refer to Business Line Overview on page 38.
(2) Recorded in non-interest expenses.

Reconciliation of International Banking's reported results and constant dollar results

International Banking business segment results are analyzed on a constant dollar basis. Under the constant dollar basis, prior period amounts are recalculated using current period average foreign currency rates. The following table presents the reconciliation between reported and constant dollar results for International Banking for prior periods.

For the year ended October 31 ($ millions)	2017			2016		
(Taxable equivalent basis)	Reported	Foreign exchange	Constant dollar	Reported	Foreign exchange	Constant dollar
Net interest income	$ 6,726	$ 100	$ 6,626	$ 6,359	$ 168	$ 6,191
Non-interest income	3,688	35	3,653	3,482	42	3,440
Total revenue	10,414	135	10,279	9,841	210	9,631
Provision for credit losses	1,294	18	1,276	1,281	24	1,257
Non-interest expenses	5,664	70	5,594	5,523	135	5,388
Income tax expense	828	13	815	707	(83)	790
Net Income	$ 2,628	$ 34	$ 2,594	$ 2,330	$ 134	$ 2,196
Net income attributable to non-controlling interest in subsidiaries	$ 238	$ (2)	$ 240	$ 251	$ (9)	$ 260
Net income attributable to equity holders of the Bank	$ 2,390	$ 36	$ 2,354	$ 2,079	$ 143	$ 1,936
Other measures						
Average assets ($ billions)	$ 148	$ 3	$ 145	$ 143	$ 4	$ 139
Average liabilities ($ billions)	$ 115	$ 2	$ 113	$ 109	$ 3	$ 106

The above table is computed on a basis that is different than the table "Impact of foreign currency translation" in Group Financial Performance on page 25.

Core banking assets

Core banking assets are average earning assets excluding bankers' acceptances and average trading assets within Global Banking and Markets.

Core banking margin

This ratio represents net interest income divided by average core banking assets.

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T3 Financial highlights

As at and for the years ended October 31	2018(1)	2017	2016
Operating results ($ millions)			
Net interest income	**16,191**	15,035	14,292
Non-interest income	**12,584**	12,120	12,058
Total revenue	**28,775**	27,155	26,350
Provision for credit losses	**2,611**	2,249	2,412
Non-interest expenses	**15,058**	14,630	14,540
Income tax expense	**2,382**	2,033	2,030
Net income	**8,724**	8,243	7,368
Net income attributable to common shareholders	**8,361**	7,876	6,987
Operating performance			
Basic earnings per share ($)	**6.90**	6.55	5.80
Diluted earnings per share ($)	**6.82**	6.49	5.77
Return on equity (%)	**14.5**	14.6	13.8
Productivity ratio (%)	**52.3**	53.9	55.2
Operating leverage (%)	**3.0**	2.4	(1.9)
Core banking margin (%)(2)	**2.46**	2.46	2.38
Financial position information ($ millions)			
Cash and deposits with financial institutions	**62,269**	59,663	46,344
Trading assets	**100,262**	98,464	108,561
Loans	**551,834**	504,369	480,164
Total assets	**998,493**	915,273	896,266
Deposits	**676,534**	625,367	611,877
Common equity	**61,044**	55,454	52,657
Preferred shares and other equity instruments	**4,184**	4,579	3,594
Assets under administration	**516,033**	470,198	472,817
Assets under management	**282,219**	206,675	192,702
Capital and liquidity measures			
Common Equity Tier 1 (CET1) capital ratio (%)	**11.1**	11.5	11.0
Tier 1 capital ratio (%)	**12.5**	13.1	12.4
Total capital ratio (%)	**14.3**	14.9	14.6
Leverage ratio (%)	**4.5**	4.7	4.5
CET1 risk-weighted assets ($ millions) (3)	**400,507**	376,379	364,048
Liquidity coverage ratio (LCR) (%)	**124**	125	127
Credit quality			
Net impaired loans ($ millions) (4)	**3,453**	2,243	2,446
Allowance for credit losses ($ millions) (5)	**5,154**	4,327	4,626
Net impaired loans as a % of loans and acceptances (4)	**0.60**	0.43	0.49
Provision for credit losses as a % of average net loans and acceptances (6)	**0.48**	0.45	0.50
Provision for credit losses on impaired loans as a % of average net loans and acceptances (6)	**0.43**	0.45	0.50
Net write-offs as a % of average net loans and acceptances	**0.44**	0.50	0.41
Adjusted results(2)			
Adjusted net income ($ millions)	**9,144**	8,303	7,722
Adjusted diluted earnings per share ($)	**7.11**	6.54	6.05
Adjusted return on equity (%)	**14.9**	14.7	14.5
Adjusted productivity ratio (%)	**51.7**	53.6	53.4
Adjusted operating leverage (%)	**3.7**	(0.2)	1.0
Adjusted provision for credit losses as a % of average net loans and acceptances (6)	**0.41**	0.45	0.50
Common share information			
Closing share price ($) (TSX)	**70.65**	83.28	72.08
Shares outstanding (millions)			
Average – Basic	**1,213**	1,203	1,204
Average – Diluted	**1,229**	1,223	1,226
End of period	**1,227**	1,199	1,208
Dividends paid per share ($)	**3.28**	3.05	2.88
Dividend yield (%) (7)	**4.2**	4.0	4.7
Market capitalization ($ millions) (TSX)	**86,690**	99,872	87,065
Book value per common share ($)	**49.75**	46.24	43.59
Market value to book value multiple	**1.4**	1.8	1.7
Price to earnings multiple (trailing 4 quarters)	**10.2**	12.7	12.4
Other information			
Employees (full-time equivalent)	**97,629**	88,645	88,901
Branches and offices	**3,095**	3,003	3,113

(1) The amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior year amounts have not been restated (refer to Notes 3 and 4 in the consolidated financial statements).
(2) Refer to page 18 for a discussion of Non-GAAP measures.
(3) As at October 31, 2018, credit valuation adjustment (CVA) risk-weighted assets were calculated using scalars of 0.80, 0.83 and 0.86 to compute CET1, Tier 1 and Total Capital ratios, respectively (scalars of 0.72, 0.77, and 0.81 in 2017, scalars 0.64, 0.71, 0.77 in 2016).
(4) Excludes loans acquired under the Federal Deposit Insurance Corporation (FDIC) guarantee related to the acquisition of R-G Premier Bank of Puerto Rico, prior to 2018.
(5) Includes allowance for credit losses on all financial assets – loans, acceptances, off-balance sheet exposures, debt securities, and deposits with financial institutions.
(6) Includes provision for credit losses on certain financial assets – loans, acceptances, and off-balance sheet exposures.
(7) Based on the average of the high and low common share price for the year.

Overview of Performance

Financial Results: 2018 vs 2017

Net income was $8,724 million, up 6% from $8,243 million last year. Diluted earnings per share (EPS) were $6.82 compared to $6.49, up 5%. Return on equity was 14.5% compared to 14.6%.

Adjusting for the impact of Acquisition-related costs (refer to Non-GAAP Measures), net income was $9,144 million, up 10% from $8,303 million. Net income was positively impacted by increases in net interest income and trading revenues, as well as lower provision for credit losses. Partially offsetting were lower gains on sale of real estate and investment securities, and a higher effective tax rate. Adjusted Diluted EPS were $7.11, up 9%. Adjusted Return on equity was 14.9% compared to 14.7%.

Net interest income was $16,191 million, an increase of $1,156 million or 8% from strong growth in Canadian Banking and International Banking including the 2% impact of acquisitions. This was partly offset by the negative impact of foreign currency translation.

The core banking margin was 2.46%, in line with the prior year. Higher margins in Canadian Banking and Global Banking and Markets were offset by lower margins in International Banking due mainly to acquisitions, and the impact of asset/liability management activities.

Non-interest income was $12,584 million, up $464 million or 4%. The impact of the sale of the HollisWealth business ("Sale of Business") last year, net of the benefit from current year acquisitions, reduced non-interest income by 1%. The remaining 5% growth was from higher banking and credit card fees, trading revenues, income from associated corporations and the benefit from an additional month of income for certain businesses from the alignment of reporting period with the Bank ("Alignment of reporting period"). This was partly offset by lower gains on the sale of real estate and investment securities.

Provision for credit losses was $2,611 million, an increase of $362 million from last year. Adjusting for Acquisition-related costs, the provision for credit losses decreased $42 million, due primarily to lower provisions in Canadian Banking and Global Banking and Markets, offset by higher provisions in International Banking. The provision for credit losses ratio was 48 basis points, up three basis points from 45 basis points last year. Adjusting for Acquisition-related costs, the provision for credit losses ratio was 41 basis points, four basis points below last year.

Non-interest expenses were $15,058 million, an increase of $428 million or 3%. Adjusting for Acquisition-related costs, non-interest expenses increased 2%. The impact of the acquisitions was more than offset by the benefit from the Sale of Business last year. The remaining increase was due to higher investments in technology and regulatory initiatives and higher business taxes, partly offset by the accounting benefit driven by remeasurement of an employee benefit liability ("benefits remeasurement"), and the positive impact of foreign currency translation.

The productivity ratio was 52.3% compared to 53.9% last year. Adjusting for Acquisition-related costs, the productivity ratio was 51.7%. The benefits remeasurement improved the productivity ratio by 0.7%. Operating leverage was positive 3.0% on a reported basis. Adjusting for Acquisition-related costs, operating leverage was 3.7%. The benefits remeasurement improved the operating leverage by 1.3%.

The provision for income taxes was $2,382 million, an increase of $349 million. The Bank's overall effective tax rate for the year was 21.5% compared to 19.8% for 2017. The increase in the effective tax rate was due primarily to higher tax-exempt income from client-driven equity trading activities in the prior year, partially offset by lower taxes in certain foreign jurisdictions this year.

The Basel III Common Equity Tier 1 ratio was 11.1% as at October 31, 2018, compared to 11.5% last year, and remained well above the regulatory minimum.

Medium-term financial objectives

	2018 Results	
	Reported	Adjusted(1)
Diluted earnings per share growth of 7%+	5%	9%
Return on equity of 14%+	14.5%	14.9%
Achieve positive operating leverage	Positive 3.0%	Positive 3.7%
Maintain strong capital ratios	CET1 capital ratio of 11.1%	CET1 capital ratio of 11.1%

(1) Refer to non-GAAP measures on page 18.

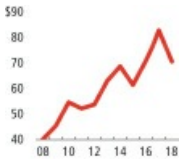
Shareholder Returns

In fiscal 2018, the total shareholder return on the Bank's shares was negative 11.6%, compared to the total return of the S&P/TSX Composite Index of negative 3.4%.

The total compound annual shareholder return on the Bank's shares over the past five years was 6.6%, and 10.4% over the past 10 years. This exceeded the total annual return of the S&P/TSX Composite Index, which was 5.5% over the past five years and 7.6% over the last 10 years.

Dividends were raised twice during the year – a three cent increase effective the second quarter and a further three cent increase effective the fourth quarter. As a result, dividends per share totaled $3.28 for the year, up 8% from $3.05 in 2017. The dividend payout ratio of 47.7% for the year was in line with the Bank's target payout range of 40-50%.

C1 Closing common share price as at October 31

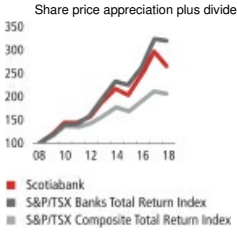


T4 Shareholder returns

For the years ended October 31	2018	2017	2016
Closing market price per common share ($)	**70.65**	83.28	72.08
Dividends paid ($ per share)	**3.28**	3.05	2.88
Dividend yield (%)(1)	**4.2**	4.0	4.7
Increase (decrease) in share price (%)	**(15.2)**	15.5	17.2
Total annual shareholder return (%)(2)	**(11.6)**	20.3	22.5

(1) Dividend yield is calculated as the dividend paid divided by the average of the high and low common share price for the year.
(2) Total annual shareholder return assumes reinvestment of quarterly dividends, and therefore may not equal the sum of dividend and share price returns in the table.

C2 Return to common shareholders
Share price appreciation plus dividends reinvested, 2008=100



Economic Outlook

Global growth remains strong but trade policy risks are on the rise. The global economy remains sufficiently robust to deal with reasonably small trade tensions such as the tariffs on steel and aluminum, but a deepening of trade tensions between the United States and China could have significant economic impacts. A rational approach to trade policy is expected to prevail and prevent an escalation of trade tensions.

The Canadian economy remains in good shape with growth expected to accelerate modestly to 2.2% in 2019 from the 2.1% forecast for 2018. The sources of Canadian growth appear to be evolving toward a more sustainable mix with a lighter emphasis on household consumption and real estate, and a greater contribution from investment and trade that could help increase productivity. Canadian interest rates will likely continue to rise, with the Bank of Canada rate expected to reach 2.75% by end 2019.

Over the last year, the U.S. economy has experienced a combination of moderate growth, modest inflation, and gradually rising interest rates. The U.S. economy has been in a favourable period of benign data and policy that have allowed the current eight-and-a-half-year run of uninterrupted growth to become the second longest U.S. expansion in history as of June 2018. The current policy mix in the U.S. clouds expectations beyond 2019. Against this background, the Federal Reserve will continue to normalize its policy settings, with rates likely rising to 3.25% by end 2019.

A key challenge facing emerging markets this year is the transition to a more hawkish stance on the part of the Federal Reserve, amplified in some countries by tensions with the United States. The countries of the Pacific Alliance have been generally insulated from these movements. Growth prospects are improving in many of these countries as economic activity is expected to improve relative to last year. This is most true in Peru, where the rise in commodity prices over the past year and a new government is leading to large increases in growth rates relative to 2017. In Colombia, an increase in oil prices over the past year is providing a positive impulse to business investment, which will be further strengthened as confidence in the new government takes hold. Strengthening business activity will add to already solid household spending. In Chile, GDP growth is expected to moderate somewhat from the strong levels witnessed in 2018 but should still exceed 3%. In Mexico, the economy remains moderately strong, as activity continues to benefit from robust growth in the U.S. and the rest of the world. The political transition is key to Mexican prospects.

Impact of Foreign Currency Translation

The impact of foreign currency translation on net income is shown in the table below.

T5 Impact of foreign currency translation

	2018		2017		2016	
For the fiscal years	**Average exchange rate**	**% Change**	Average exchange rate	% Change	Average exchange rate	% Change
U.S. Dollar/Canadian Dollar	**0.777**	**1.6%**	0.765	1.4%	0.754	(6.4)%
Mexican Peso/Canadian Dollar	**14.802**	**1.3%**	14.608	6.9%	13.666	10.3%
Peruvian Sol/Canadian Dollar	**2.538**	**1.0%**	2.513	(1.0)%	2.539	1.3%
Colombian Peso/Canadian Dollar	**2,272**	**0.3%**	2,265	(1.8)%	2,307	10.8%
Chilean Peso/Canadian Dollar	**492.892**	**(1.4)%**	500.108	(2.8)%	514.549	0.5%

Impact on net income (1) ($ millions except EPS)	2018 vs. 2017	2017 vs. 2016	2016 vs. 2015
Net interest income	**$ (101)**	$ (112)	$ (51)
Non-interest income(2)	**(21)**	(65)	182
Non-interest expenses	**85**	99	86
Other items (net of tax)	**17**	18	(34)
Net income	**$ (20)**	$ (60)	$ 183
Earnings per share (diluted)	**$ (0.02)**	$ (0.05)	$ 0.15
Impact by business line ($ millions)			
Canadian Banking	**$ (4)**	$ (4)	$ 14
International Banking(2)	**(46)**	(14)	44
Global Banking and Markets	**(12)**	(12)	65
Other(2)	**42**	(30)	60
	$ (20)	$ (60)	$ 183

(1) Includes impact of all currencies.
(2) Includes the impact of foreign currency hedges.

GROUP FINANCIAL PERFORMANCE

Basis of Presentation

The Bank adopted International Financial Reporting Standard (IFRS) 9, *Financial Instruments* effective November 1, 2017. IFRS 9 includes an accounting policy choice to defer the adoption of IFRS 9 hedge accounting and to continue to apply the requirements of IAS 39 hedge accounting. The Bank has exercised this accounting policy choice. The Bank recorded a charge to its opening November 1, 2017 total equity of $610 million, to reflect the impact of the new requirements of impairment and classification and measurement of financial instruments at the adoption date and did not restate comparative periods, as permitted by the standard. Accordingly, the current year 2018 results are based on IFRS 9, while the prior years' results are based on International Accounting Standard (IAS) 39, *Financial Instruments: Recognition and Measurement* and therefore, these amounts and related ratios are not comparable. The main impact of impairment under IFRS 9 is on provision for credit losses, and the impact of classification and measurement is on non-interest income. The provision for credit losses on performing loans is stages 1 and 2 under IFRS 9, while provision for credit losses on impaired loans is stage 3. For detailed description of the changes, refer to Notes 3 and 4 in the consolidated financial statements.

Net Income

Net income was $8,724 million, up 6% compared to $8,243 million last year reflecting good revenue growth, prudent expense management and the benefits from acquisitions. Adjusting for the impact of Acquisition-related costs, net income was $9,144 million, up 10% from $8,303 million.

Net Interest Income

Net interest income was $16,191 million, an increase of $1,156 million or 8% from strong growth in core banking assets and the impact of acquisitions. This was partly offset by the negative impact of foreign currency translation.

Net interest income in Canadian Banking was up $535 million or 7% driven by strong asset and deposit growth and expansion in margin. Net interest income increased $596 million or 9% in International Banking due primarily to strong asset growth and the 3% contribution from acquisitions. Net interest income in Global Banking and Markets rose $118 million or 9% driven by higher deposit volumes and higher lending volumes in the U.S.

Core banking assets increased $44 billion to $652 billion. The increase was driven by strong retail and commercial loan growth in International Banking due mainly to acquisitions, growth in residential mortgages, business loans and personal loans in Canadian Banking, as well as higher treasury assets.

The core banking margin was unchanged at 2.46%. Higher margins in Canadian Banking and Global Banking and Markets were offset by lower margins in International Banking due partly to acquisitions and higher volumes of lower margin treasury assets.

Outlook

Net interest income is expected to increase in 2019 driven by growth in core banking assets, the full year impact of the acquisitions made in 2018 and higher net interest margins driven primarily by rising interest rates in Canada.

T6 Net interest income and core banking margin (1)

	2018			2017			2016		
($ billions, except percentage amounts)	**Average balance**	**Interest**	**Average rate**	Average balance	Interest	Average rate	Average balance	Interest	Average rate
Total average assets and net interest income	**$ 945.7**	**$ 16.2**		$ 912.6	$ 15.0		$ 913.8	$ 14.3	
Less: trading related businesses in Global Banking and Markets (1)	**234.6**	**0.1**		249.2	–		259.4	–	
Banking margin on average total assets	**$ 711.1**	**$ 16.1**	**2.26%**	$ 663.4	$ 15.0	2.26%	$ 654.4	$ 14.3	2.18%
Less: non-earning assets and customers' liability under acceptances	**58.7**	**–**		54.6	–		56.6	–	
Core banking assets and margin	**$ 652.4**	**$ 16.1**	**2.46%**	$ 608.8	$ 15.0	2.46%	$ 597.8	$ 14.3	2.38%

(1) Most net interest income from Capital Markets trading assets is recorded in trading revenues in non-interest income.

T7 Average balance sheet(1) and net interest income

For the fiscal years ($ billions)	2018 Average balance	2018 Interest	2018 Average rate	2017 Average balance	2017 Interest	2017 Average rate	2016 Average balance	2016 Interest	2016 Average rate
Assets									
Deposits with financial institutions	**$ 54.2**	**$ 0.9**	**1.59%**	$ 53.2	$ 0.5	0.98%	$ 67.8	$ 0.4	0.58%
Trading assets	**101.6**	**0.2**	**0.17%**	107.2	0.1	0.13%	107.2	0.2	0.16%
Securities purchased under resale agreements and securities borrowed	**94.4**	**0.4**	**0.47%**	97.0	0.3	0.29%	99.8	0.1	0.16%
Investment securities	**79.8**	**1.6**	**2.01%**	74.8	1.3	1.68%	67.8	1.1	1.57%
Loans:									
Residential mortgages	**244.2**	**8.3**	**3.39%**	228.3	7.4	3.23%	218.6	7.4	3.37%
Personal loans	**92.1**	**6.0**	**6.55%**	87.4	5.3	6.08%	84.4	5.0	5.98%
Credit cards	**15.1**	**2.8**	**18.45%**	13.5	2.5	18.73%	12.4	2.3	18.37%
Business and government	**177.0**	**7.9**	**4.45%**	165.0	6.5	3.94%	161.4	5.5	3.41%
Allowance for credit losses	**(5.0)**			(4.5)			(4.6)		
Total loans	**$ 523.4**	**$ 25.0**	**4.77%**	$ 489.7	$ 21.7	4.43%	$ 472.2	$ 20.2	4.28%
Total earning assets	**$ 853.4**	**$ 28.1**	**3.29%**	$ 821.9	$ 23.9	2.91%	$ 814.8	$ 22.0	2.70%
Customers' liability under acceptances	**16.3**			12.3			11.4		
Other assets	**76.0**			78.4			87.6		
Total assets	**$ 945.7**	**$ 28.1**	**2.97%**	$ 912.6	$ 23.9	2.62%	$ 913.8	$ 22.0	2.41%
Liabilities and equity									
Deposits:									
Personal	**$ 213.9**	**$ 3.3**	**1.52%**	$ 203.8	$ 2.7	1.30%	$ 195.1	$ 2.4	1.22%
Business and government	**399.8**	**6.5**	**1.64%**	374.7	4.7	1.26%	384.7	3.9	1.01%
Financial institutions	**42.2**	**0.7**	**1.77%**	42.1	0.5	1.23%	42.8	0.4	1.03%
Total deposits	**$ 655.9**	**$ 10.5**	**1.61%**	$ 620.6	$ 7.9	1.27%	$ 622.6	$ 6.7	1.08%
Obligations related to securities sold under repurchase agreements and securities lent	**96.0**	**0.3**	**0.25%**	102.3	0.2	0.21%	99.1	0.2	0.19%
Subordinated debentures	**5.7**	**0.2**	**3.71%**	7.1	0.2	3.19%	7.5	0.2	3.10%
Other interest-bearing liabilities	**60.1**	**0.9**	**1.46%**	58.5	0.6	0.99%	54.9	0.6	1.04%
Total interest-bearing liabilities	**$ 817.7**	**$ 11.9**	**1.45%**	$ 788.5	$ 8.9	1.13%	$ 784.1	$ 7.7	0.98%
Other liabilities including acceptances	**63.9**			65.3			74.4		
Equity(2)	**64.1**			58.8			55.3		
Total liabilities and equity	**$ 945.7**	**$ 11.9**	**1.26%**	$ 912.6	$ 8.9	0.97%	$ 913.8	$ 7.7	0.84%
Net interest income		**$ 16.2**			$ 15.0			$ 14.3	

(1) Average of daily balances.
(2) Includes non-controlling interest of $1.9 (2017 – $1.6; 2016 – $1.5).

Non-Interest Income

T8 Non-interest income

For the fiscal years ($ millions)	2018	2017	2016	2018 versus 2017
Banking				
Card revenues	**$ 1,656**	$ 1,514	$ 1,359	**9%**
Deposit and payment services				
Deposit services	**1,027**	989	949	**4**
Other payment services	**339**	335	330	**1**
	1,366	1,324	1,279	**3**
Credit fees				
Commitment and other credit fees	**840**	846	870	**(1)**
Acceptance fees	**351**	307	284	**14**
	1,191	1,153	1,154	**3**
Other	**466**	472	436	**(1)**
	$ 4,679	$ 4,463	$ 4,228	**5%**
Banking fee related expenses	**678**	608	559	**12**
Total banking	**$ 4,001**	$ 3,855	$ 3,669	**4%**
Wealth management				
Mutual funds	**$ 1,714**	$ 1,639	$ 1,624	**5%**
Brokerage fees(1)	**895**	1,047	1,034	**(15)**
Investment management and trust(1)				
Investment management and custody	**551**	453	443	**22**
Personal and corporate trust	**181**	179	181	**1**
	732	632	624	**16**
Total wealth management	**$ 3,341**	$ 3,318	$ 3,282	**1%**
Underwriting and other advisory	**514**	598	594	**(14)**
Non-trading foreign exchange	**622**	557	540	**12**
Trading revenues(1)	**1,420**	986	1,228	**44**
Net gain on investment securities	**146**	380	534	**(62)**
Net income from investments in associated corporations	**559**	407	414	**37**
Insurance underwriting income, net of claims	**686**	626	603	**10**
Other fees and commissions (1)	**841**	903	732	**(7)**
Other(1)	**454**	490	462	**(7)**
Total non-interest income	**$12,584**	$12,120	$12,058	**4%**

(1) Prior year amounts have been reclassified to conform with current period presentation.

C3 Sources of non-interest income



Non-interest income was up $464 million or 4% to $12,584 million. The impact of the Sale of Business last year, net of the benefit from current year acquisitions, reduced non-interest income by 1%. The remaining 5% growth was primarily from higher banking, trading revenues, income from associated corporations and the benefit from Alignment of reporting period. This was partly offset by lower gains on investment securities and real estate.

Banking revenues, net of related expenses, grew $146 million or 4% to $4,001 million largely from strong growth in card revenues both in Canadian Banking and International Banking. Fees from deposit and payment services grew $42 million and Credit fees also increased $38 million, mainly in Canadian Banking. Banking fee related expenses increased $70 million or 12%, due mainly to credit card expenses driven by higher volumes.

Wealth management revenues increased $23 million or 1% due to higher fees from mutual funds and investment management and trust businesses, in part from the acquisitions of Jarislowsky Fraser and MD Financial. Largely offsetting were lower brokerage fees resulting from the impact of the Sale of Business in the prior year.

Underwriting and Other advisory fees declined $84 million or 14% mostly due to lower new issuance activity in the fixed income and equities businesses.

Trading revenues were up $434 million or 44%, due primarily to higher revenues in equities, partly offset by lower revenues in fixed income and commodities businesses.

Insurance underwriting income was up $60 million or 10%, due mainly to the Alignment of reporting period and higher premiums from strong business growth in the Canadian market.

Other income was down $36 million or 7%, due primarily to lower gain on sale of real estate and the impact of the gain on Sale of Business in the previous year.

Outlook

Non-interest income in 2019 is expected to increase due to higher wealth management fees from the 2018 acquisitions, credit card revenues and banking fees. The growth is expected to be partly offset by lower gains on sale of investment securities and real estate.

T9 Trading revenues

For the fiscal years ($ millions)	2018	2017	2016
By trading products:			
Interest rate and credit	**$ 272**	$ 474	$ 559
Equities	**441**	(125)	(20)
Commodities	**231**	295	376
Foreign exchange	**295**	250	262
Other	**181**	92	51
Total trading revenues	**$ 1,420**	$ 986	$ 1,228
% of total revenues	**4.9%**	3.6%	4.7%

Provision for Credit Losses

Provision for credit losses for 2018 is calculated in accordance with IFRS 9, while the provision for credit losses for 2017 was calculated in accordance with IAS 39.

The provision for credit losses was $2,611 million, compared to $2,249 million in 2017. Adjusting for Acquisition-related costs, the provision for credit losses decreased $42 million or 2%.

The provision for credit losses on impaired financial assets increased $106 million relating primarily to retail portfolios in International Banking, mainly in Latin America driven in part by credit mark benefit in the prior year. This was partially offset by lower provisions in Canadian Banking and Global Banking and Markets. Provision for performing loans decreased $148 million due primarily to reversal of the previously recorded provision for the hurricanes in the Caribbean that are no longer required and improvement in credit quality. The provision for credit losses ratio was 48 basis points, an increase of three basis points. Adjusting for Acquisition-related costs, the provision for credit losses ratio was 41 basis points.

Outlook

The quality of the Bank's credit portfolio is expected to remain strong given its broad global diversification. Provision for credit losses is expected to be higher in 2019 in line with organic growth and the impact of acquisitions. As well, certain improvements in credit quality experienced in 2018 are expected to remain stable and not result in additional recoveries in 2019. Overall, the provision for credit losses ratio in 2019 is expected to be within the Bank's risk appetite.

T10 Provision for credit losses by business line

	2018		
For the fiscal years ($ millions)	**Performing (Stage 1 and 2)**	**Impaired (Stage 3)**	**Total**
Canadian Banking			
Retail	**$ (13)**	**$ 759**	**$ 746**
Commercial	**21**	**27**	**48**
Total	**8**	**786**	**794**
International Banking			
Retail	**304**	**1,363**	**1,667**
Commercial	**(24)**	**193**	**169**
Total	**280**	**1,556**	**1,836**
Global Banking and Markets	**(23)**	**(28)**	**(51)**
Other	**–**	**–**	**–**
Provision for credit losses on loans, acceptances and off-balance sheet exposures	**$ 265**	**$ 2,314**	**$ 2,579**
International Banking	**$ (10)**	**$ 41**	**$ 31**
Global Banking and Markets	**$ 1**	**$ –**	**$ 1**
Provision for credit losses on debt securities and deposits with banks	**$ (9)**	**$ 41**	**$ 32**
Total provision for credit losses	**$ 256**	**$ 2,355**	**$ 2,611**

T10A Provisions against impaired loans by business line

For the fiscal years ($ millions)	2018(1)	2017	2016
Canadian Banking			
Retail	**$ 759**	$ 857	$ 770
Commercial	**27**	56	62
	$ 786	$ 913	$ 832
International Banking			
Caribbean and Central America	**$ 321**	$ 215	$ 250
Latin America			
Mexico	**239**	193	224
Peru	**349**	329	317
Chile	**275**	145	112
Colombia	**358**	337	320
Other Latin America	**55**	75	58
Total Latin America	**1,276**	1,079	1,031
	$ 1,597	$ 1,294	$ 1,281
Global Banking and Markets			
Canada	**$ (1)**	$ (6)	$ 43
U.S.	**(6)**	(15)	113
Asia and Europe	**(21)**	63	93
	$ (28)	$ 42	$ 249
Total	**$ 2,355**	$ 2,249	$ 2,362

(1) The amounts for 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Notes 3 and 4 in the consolidated financial statements).

T11 Provision for credit losses as a percentage of average net loans and acceptances (1)(2)(3)

For the fiscal years (%)	2018	2017	2016
Canadian Banking			
Retail	**0.26%**	0.32%	0.29%
Commercial	**0.10**	0.13	0.15
	0.24	0.29	0.28
International Banking			
Retail	**2.84**	2.09	2.08
Commercial	**0.27**	0.37	0.52
	1.51	1.21	1.26
Global Banking and Markets	**(0.06)**	0.05	0.30
Provisions against impaired loans	**0.43**	0.45	0.49
Provisions against performing loans	**0.05**	0.00	0.01
Total	**0.48%**	0.45%	0.50%

(1) The amounts for 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Notes 3 and 4 in the consolidated financial statements).
(2) Includes provision for credit losses on certain financial assets – loans, acceptances, andoff-balance sheet exposures.
(3) 2018 includes Day 1 acquisition-related impact in International Banking.

T12 Net write-offs (1) as a percentage of average loans and acceptances (2)(3)

For the fiscal years (%)	2018	2017	2016
Canadian Banking			
Retail	**0.27%**	0.34%	0.26%
Commercial	**0.09**	0.18	0.16
	0.24	0.32	0.24
International Banking			
Retail	**2.35**	2.17	1.90
Commercial	**0.23**	0.50	0.31
	1.25	1.31	1.06
Global Banking and Markets	**0.03**	0.11	0.21
Total	**0.44%**	0.50%	0.41%

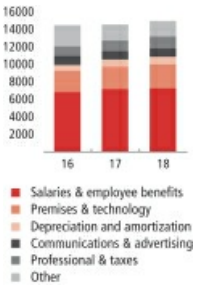
(1) Write-offs net of recoveries.
(2) The amounts for 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Notes 3 and 4 in the consolidated financial statements).
(3) Excludes loans acquired under the Federal Deposit Insurance Corporation (FDIC) guarantee related to the acqusition ofR-G Premier Bank of Puerto Rico, prior to 2018.

Non-Interest Expenses

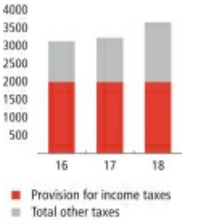
T13 Non-interest expenses and productivity

For the fiscal years ($ millions)	2018	2017	2016	2018 versus 2017
Salaries and employee benefits				
Salaries	**$ 4,454**	$ 4,220	$ 4,071	**6%**
Performance-based compensation	**1,624**	1,599	1,538	**2**
Share-based payments	**192**	209	243	**(8)**
Other employee benefits	**1,185**	1,347	1,173	**(12)**
	$ 7,455	$ 7,375	$ 7,025	**1%**
Premises and technology				
Premises				
Occupancy	**477**	444	428	**7**
Property taxes	**98**	93	89	**5**
Other premises costs	**437**	432	431	**1**
	$ 1,012	$ 969	$ 948	**4%**
Technology	**$ 1,565**	$ 1,467	$ 1,290	**7%**
	$ 2,577	$ 2,436	$ 2,238	**6%**
Depreciation and amortization				
Depreciation	**354**	340	325	**4**
Amortization of intangible assets	**494**	421	359	**17**
	$ 848	$ 761	$ 684	**11%**
Communications	**$ 447**	$ 437	$ 442	**2%**
Advertising and business development	**$ 581**	$ 581	$ 617	**–%**
Professional	**$ 881**	$ 775	$ 693	**14%**
Business and capital taxes				
Business taxes	**419**	383	356	**9**
Capital taxes	**45**	40	47	**13**
	$ 464	$ 423	$ 403	**10%**
Other	**$ 1,805**	$ 1,842	$ 2,438	**(2)%**
Total non-interest expenses	**$ 15,058**	$ 14,630	$ 14,540	**3%**
Productivity ratio	**52.3%**	53.9%	55.2%	

C4 Non-interest expenses
$ millions



C5 Direct and indirect taxes
$ millions



Non-interest expenses were $15,058 million, an increase of $428 million or 3%. Adjusting for Acquisition-related costs, non-interest expenses increased 2%. The impact of the acquisitions was more than offset by the benefit from the Sale of Business last year.

The remaining increase was due mainly to increased investments in technology, regulatory initiatives and higher business taxes. This was partly offset by the positive impact of foreign currency translation, the impact of the benefits remeasurement and lower share-based payment expenses.

The Bank's total technology cost, that includes Technology expenses in Table T13 and those included within Salaries, Professional, Amortization of intangible assets and Depreciation, was approximately $3.3 billion, an increase of 9% compared to 2017. This increase reflects the Bank's continued investment in its digital transformation and technology modernization efforts. The Bank achieved additional savings of approximately $300 million in 2018 arising from cost-reduction initiatives specifically relating to the 2016 restructuring charge, achieving the $750 million 2019 savings commitment more than one year early. The Bank's strategy to reduce structural costs will continue to focus on productivity gains to meet the Bank's commitments and thoughtful ongoing technology and regulatory investments.

The productivity ratio was 52.3% compared to 53.9% last year. Adjusting for Acquisition-related costs, the productivity ratio was 51.7%. The benefits remeasurement improved the productivity ratio by 0.7%.

Operating leverage was positive 3.0% on a reported basis. Adjusting for Acquisition-related costs, operating leverage was 3.7%. The benefits remeasurement improved the operating leverage by 1.3%.

Outlook

Non-interest expenses are expected to rise in 2019, due mainly to the impact of acquisitions made in 2018, business growth, and continuing technology and regulatory investments. This growth will be partly offset by further savings from efficiency initiatives.

Income Taxes

The provision for income taxes was $2,382 million, an increase of $349 million. The effective tax rate increased to 21.5% compared to 19.8% due primarily to higher tax-exempt income from client-driven equity trading activities in the prior year partially offset by lower taxes in certain foreign jurisdictions this year.

Outlook

The Bank's consolidated effective tax rate is expected to be in the range of 21% to 25% in 2019.

Financial Results Review: 2017 vs. 2016

In order to identify key business trends between 2017 and 2016, commentary and the related financial results are below.

Net income

The Bank had net income of $8,243 million in 2017, up 12% from $7,368 million in 2016. Diluted earnings per share were $6.49 compared to $5.77 in 2016. Return on equity was 14.6% in 2017 compared to 13.8% in 2016.

Adjusting for the impact of the restructuring charge in 2016 of $278 million after tax ($378 million pre-tax), or $0.23 per share[1], net income and diluted earnings per share increased 8%. Return on equity was 14.6% compared to 14.3% in 2016 on an adjusted basis.

Net income was positively impacted by increases in net interest income and banking fees, as well as lower provision for credit losses and a lower effective tax rate. Partially offsetting were lower trading revenues, as well as higher non-interest expenses and the unfavourable impact of foreign currency translation. Lower net gain on investment securities was partly offset by higher gains on sale of real estate. The gain on sale of HollisWealth in 2017, a wealth management business, was lower than the gain on sale of a non-core lease financing business ("gain on sale of businesses") in 2016 in Canadian Banking.

Net interest income

Net interest income increased $743 million or 5% to $15,035 million in 2017, due primarily to growth in retail and commercial lending in Canadian Banking and International Banking, partly offset by the unfavourable impact of foreign currency translation. The core banking margin improved eight basis points to 2.46%, driven by higher margins in all business lines.

Non-interest income

Non-interest income increased $62 million or 1% to $12,120 million in 2017. Higher banking and credit card revenues were partly offset by lower trading revenues and lower fee and commission revenues due to the sale of HollisWealth business. Lower gain on sale of businesses in Canadian Banking, lower net gain on investment securities and the negative impact of foreign currency translation were partly offset by higher gains on sale of real estate.

Provision for credit losses

Provision for credit losses was $2,249 million, down $163 million from 2016, due primarily to lower provisions related to energy exposures and the impact of the increase in the collective allowance against performing loans of $50 million in 2016. Lower commercial provisions in Canadian Banking and International Banking were partly offset by higher retail provisions. The provision for credit losses ratio improved five basis points to 45 basis points.

Non-interest expenses

Non-interest expenses were $14,630 million in 2017 compared to $14,540 million. Adjusting for the impact of the restructuring charge in 2016, non-interest expenses increased $468 million or 3%, reflecting higher employee costs, including pension and other benefit costs, as well as performance-based compensation and the impact of acquisitions. Increased investments in technology and digital banking also contributed to the year-over-year increase. Partly offsetting were savings from cost-reduction initiatives, the impact from the sale of a wealth management business, and the impact of foreign currency translation.

Income taxes

The provision for income taxes was $2,033 million in line with 2016. The Bank's effective tax rate for the year was 19.8% compared to 21.6%, due primarily to higher tax-exempt dividends related to client-driven equity trading activities and lower taxes in certain foreign jurisdictions in 2017.

T14 Financial Results Review

For the year ended October 31, 2017 ($ millions) [1]	Canadian Banking	International Banking	Global Banking and Markets	Other[2]	**Total**
Net interest income	$ 7,363	$ 6,726	$ 1,336	$ (390)	**$ 15,035**
Non-interest income	5,488	3,688	3,288	(344)	**12,120**
Total revenue	$ 12,851	$ 10,414	$ 4,624	$ (734)	**$ 27,155**
Provision for credit losses	913	1,294	42	–	**2,249**
Non-interest expenses	6,487	5,664	2,160	319	**14,630**
Income tax expense	1,387	828	604	(786)	**2,033**
Net income	$ 4,064	$ 2,628	$ 1,818	$ (267)	**$ 8,243**
Net income attributable to non-controlling interests	–	238	–	–	**238**
Net income attributable to equity holders of the Bank	$ 4,064	$ 2,390	$ 1,818	$ (267)	**$ 8,005**

(1) Taxable equivalent basis. Refer to Glossary.
(2) Includes all other smaller operating segments, including Group Treasury, and corporate adjustments, such as the elimination of the tax-exempt income gross-up reported in net interest income, non-interest income and provision for income taxes for the year ended October 31, 2017 – $562 to arrive at the amounts reported in Consolidated Statement of income, and differences in the actual amount of costs incurred and charged to the operating segments.

(1) Refer to Non-GAAP Measures.

For the year ended October 31, 2016 ($ millions) (1)	Canadian Banking	International Banking	Global Banking and Markets	Other(2)	**Total**
Net interest income	$ 7,024	$ 6,359	$ 1,293	$ (384)	**$ 14,292**
Non-interest income	5,164	3,482	3,139	273	**12,058**
Total revenue	$ 12,188	$ 9,841	$ 4,432	$ (111)	**$ 26,350**
Provision for credit losses	832	1,281	249	50	**2,412**
Non-interest expenses	6,324	5,523	2,040	653	**14,540**
Income tax expense	1,296	707	572	(545)	**2,030**
Net income	$ 3,736	$ 2,330	$ 1,571	$ (269)	**$ 7,368**
Net income attributable to non-controlling interests	–	251	–	–	**251**
Net income attributable to equity holders of the Bank	$ 3,736	$ 2,079	$ 1,571	$ (269)	**$ 7,117**

(1) Taxable equivalent basis. Refer to Glossary.
(2) Includes all other smaller operating segments, including Group Treasury, and corporate adjustments, such as the elimination of the tax-exempt income gross-up reported in net interest income, non-interest income and provision for income taxes for the year ended October 31, 2016 – $299 to arrive at the amounts reported in Consolidated Statement of income, and differences in the actual amount of costs incurred and charged to the operating segments.

Fourth Quarter Review

T15 Fourth quarter financial results

($ millions)	For the three months ended October 31 2018(1)	July 31 2018(1)	October 31 2017
Reported results			
Net interest income	**$ 4,220**	$ 4,085	$ 3,831
Non-interest income	**3,228**	3,096	2,981
Total revenue	**$ 7,448**	$ 7,181	$ 6,812
Provision for credit losses	**590**	943	536
Non-interest expenses	**4,064**	3,770	3,668
Income tax expense	**523**	529	538
Net income	**$ 2,271**	$ 1,939	$ 2,070
Net income attributable to non-controlling interests in subsidiaries	**$ 92**	$ (44)	$ 55
Net income attributable to equity holders of the Bank	**$ 2,179**	$ 1,983	$ 2,015
Preferred shareholders and other equity instrument holders	**65**	27	29
Common shareholders	**$ 2,114**	$ 1,956	$ 1,986

(1) The amounts for year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Notes 3 and 4 in the consolidated financial statements).

T15A Fourth quarter financial results

($ millions)	For the three months ended October 31 2018(1)	July 31 2018(1)	October 31 2017
Adjusted results			
Net interest income	**$ 4,220**	$ 4,085	$ 3,831
Non-interest income	**3,228**	3,096	2,981
Total revenue	**$ 7,448**	$ 7,181	$ 6,812
Provision for credit losses	**590**	539	536
Non-interest expenses	**3,962**	3,721	3,649
Income tax expense	**551**	662	543
Net income	**$ 2,345**	$ 2,259	$ 2,084
Net income attributable to non-controlling interests in subsidiaries	**$ 101**	$ 69	$ 55
Net income attributable to equity holders of the Bank	**$ 2,244**	$ 2,190	$ 2,029
Preferred shareholders and other equity instrument holders	**65**	27	29
Common shareholders	**$ 2,179**	$ 2,163	$ 2,000

(1) The amounts for year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Notes 3 and 4 in the consolidated financial statements).

Transactions impacting results

Acquisition-related costs:

During the fourth quarter, the Bank completed the acquisition of MD Financial. Acquisition-related costs for MD Financial and previous acquisitions of $74 million ($102 million pre-tax), were incurred.

In the third quarter, the Bank completed the acquisitions of Jarislowsky Fraser, BBVA Chile, and the retail operations of Citibank Colombia. Acquisition-related costs of $320 million ($453 million pre-tax) were recorded in the period. These mainly related to the Day 1 provision for credit losses on acquired performing financial instruments as required under IFRS 9 (refer to Non-GAAP Measures for further details).

Net income

Q4 2018 vs Q4 2017

Net income was $2,271 million, an increase of $201 million or 10%. Adjusting for Acquisition-related costs, net income was higher by $261 million or 13%. Asset growth and an improved net interest margin, as well as higher non-interest income and the impact of acquisitions were partly offset by a higher provision for credit losses and increased non-interest expenses.

Q4 2018 vs Q3 2018

Net income was $2,271 million, an increase of $332 million or 17%. Adjusting for Acquisition-related costs, net income was higher by $86 million or 4%. The increase was due primarily to the impact of acquisitions.

Net interest income

Q4 2018 vs Q4 2017

Net interest income was $4,220 million, an increase of $389 million or 10%. Acquisitions contributed to 6% of the increase. The remaining increase was from broad-based lending growth across retail, commercial and corporate segments across our three business lines.

The core banking margin improved three basis points to 2.47%. The change in business mix from the impact of International Banking acquisitions and higher margins in Canadian Banking was partly offset by lower margin in Global Banking and Markets and a lower contribution from asset/liability management activities.

Q4 2018 vs Q3 2018

Net interest income was $4,220 million, an increase of $135 million or 3%. This increase was due primarily to the impact of acquisitions, partially offset by lower contributions from asset/liability management activities, as well as Global Banking and Markets.

The core banking margin of 2.47% was up one basis point. The positive change in asset mix driven by acquisitions and lower volumes of treasury assets were partially offset by lower margins in Global Banking and Markets and Canadian Banking.

Non-interest income

Q4 2018 vs Q4 2017

Non-interest income grew $247 million or 8% to $3,228 million. The impact of acquisitions, net of the gain on sale of HollisWealth ("Sale of Business") last year, contributed 2% to the growth. The remaining growth was due mainly to higher banking and credit card fees, trading revenues and income from associated corporations including the alignment of the reporting period with the Bank ("Alignment of reporting period"). Partly offsetting were lower gains on the sale of real estate and investment securities.

Q4 2018 vs Q3 2018

Non-interest income increased $132 million or 4%. Acquisitions accounted for approximately 3% of the growth. The remaining growth was primarily due to higher banking and credit card fees, trading revenues and income from associated corporations mostly from the Alignment of reporting period. These were partly offset by lower securities gains, wealth management fees, and the negative impact of foreign currency translation.

Provision for credit losses

Q4 2018 vs Q4 2017

The provision for credit losses was $590 million, an increase of $54 million or 10%, due to higher retail provision in line with acquisition driven growth, partly offset by a decrease in commercial provision.

Provision on impaired financial assets (including loans and debt securities) was $637 million, up $101 million due primarily to higher retail provisions in International Banking. Higher provision relating to Barbados debt restructuring was offset by recoveries in International Banking and Global Banking and Markets. The provision for credit losses ratio on impaired loans remained unchanged at 42 basis points. Reduction in provision for performing loans of $47 million was due primarily to reversal of the provision previously recorded for the hurricanes in the Caribbean that is no longer required, and improvement in credit quality. The provision for credit losses ratio decreased three basis points to 39 basis points.

Q4 2018 vs Q3 2018

The provision for credit losses was $590 million, a decrease of $353 million. Adjusting for Acquisition-related costs, the provision for credit losses increased $51 million or 9%, due to higher retail provision in line with acquisition driven growth, partly offset by decrease in commercial provision.

Provision on impaired financial assets (including loans and debt securities) was up $637 million, an increase of $78 million or 14%, due primarily to higher retail provision in International Banking, which included the full quarter impact of acquisitions. Higher provision relating to Barbados debt restructuring was offset by recoveries in International Banking and Global Banking and Markets. The provision for credit losses ratio on impaired loans was 42 basis points, an increase of one basis point. Reduction in provision for performing loans of $27 million was due primarily to reversal of the provision previously recorded for the hurricanes in the Caribbean that is no longer required, and improvement in credit quality. The provision for credit losses ratio decreased one basis point to 39 basis points.

Non-interest expenses

Q4 2018 vs Q4 2017

Non-interest expenses were $4,064 million, up $396 million or 11%. Adjusting for Acquisition-related costs, non-interest expenses were up $311 million or 9%, of which 6% related to the impact of acquisitions. The remaining 3% increase was due primarily to increased investments in technology and regulatory initiatives, other business growth-related expenses, and the negative impact of foreign currency translation. Partly offsetting were the impact of further savings from cost-reduction initiatives.

The productivity ratio was 54.6% compared to 53.8%. Adjusting for Acquisition-related costs, the productivity ratio was 53.2% compared to 53.6%.

Q4 2018 vs Q3 2018

Non-interest expenses were up $294 million or 8%. Adjusting for Acquisition-related costs, non-interest expenses were up $240 million or 7%, of which 5% related to the impact of acquisitions. The remaining 2% increase was due largely to higher advertising and business development and other expenses supporting the business, partly offset by the positive impact of foreign currency translation.

The productivity ratio was 54.6% compared to 52.5%. Adjusting for Acquisition-related costs, the productivity ratio was 53.2% compared to 51.8%.

Income taxes

Q4 2018 vs Q4 2017

The effective tax rate was 18.7%, or 19.0% adjusting for Acquisition-related costs, this quarter, down from 20.6% due primarily to lower taxes in certain foreign jurisdictions in 2018. The prior year benefitted from higher tax-exempt dividends related to client-driven equity trading activities.

Q4 2018 vs Q3 2018

The effective tax rate decreased to 18.7%, or 19.0% adjusting for Acquisition-related costs, from 21.5%, due primarily to lower taxes in certain foreign jurisdictions.

Trending Analysis

T16 Quarterly financial highlights

	For the three months ended							
($ millions)	**October 31 2018(1)**	July 31 2018(1)	April 30 2018(1)	January 31 2018(1)	October 31 2017	July 31 2017	April 30 2017	January 31 2017
Reported results								
Net interest income	**$ 4,220**	$ 4,085	$ 3,950	$ 3,936	$ 3,831	$ 3,833	$ 3,728	$ 3,643
Non-interest income	**3,228**	3,096	3,108	3,152	2,981	3,061	2,853	3,225
Total revenue	**$ 7,448**	$ 7,181	$ 7,058	$ 7,088	$ 6,812	$ 6,894	$ 6,581	$ 6,868
Provision for credit losses	**590**	943	534	544	536	573	587	553
Non-interest expenses	**4,064**	3,770	3,726	3,498	3,668	3,672	3,601	3,689
Income tax expense	**523**	529	621	709	538	546	332	617
Net income	**$ 2,271**	$ 1,939	$ 2,177	$ 2,337	$ 2,070	$ 2,103	$ 2,061	$ 2,009
Basic earnings per share ($)	**1.72**	1.60	1.70	1.88	1.66	1.68	1.63	1.58
Diluted earnings per share ($)	**1.71**	1.55	1.70	1.86	1.64	1.66	1.62	1.57
Core banking margin (%)(2)	**2.47**	2.46	2.47	2.46	2.44	2.46	2.54	2.40
Effective tax rate (%)	**18.7**	21.5	22.2	23.3	20.6	20.6	13.9	23.5
Adjusted results								
Adjusted net income	**$ 2,345**	$ 2,259	$ 2,190	$ 2,350	$ 2,084	$ 2,117	$ 2,075	$ 2,027
Adjusted diluted earnings per share	**$ 1.77**	$ 1.76	$ 1.71	$ 1.87	$ 1.65	$ 1.68	$ 1.63	$ 1.58

(1) The amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Notes 3 and 4 in the consolidated financial statements).
(2) Refer to page 18 for a discussion of non-GAAP measures.

Net income

The Bank recorded strong net income over the past eight quarters. The current quarter's earnings were reduced by Acquisition-related costs of $74 million ($102 million pre-tax). The prior quarter's earnings were reduced by Acquisition-related costs $320 million ($453 million pre-tax).

The first quarter of 2018 included an accounting benefit of $150 million ($203 million pre-tax) driven by remeasurement of an employee benefit liability from certain plan modifications.

Net interest income

Net interest income increased over the period, driven by steady growth in retail and commercial loans in both Canadian and International Banking. Net interest margin has remained relatively stable over the period. The margin was 2.47% this quarter, up one basis point from the prior quarter. The second quarter of 2017 was higher than other periods due primarily to business mix changes and Central Bank rate changes in International Banking, as well as higher contributions from asset/liability management activities.

Non-interest income

Non-interest income was higher in the current quarter due primarily to the impact of acquisitions, higher banking and credit card fees, trading revenues and income from associated corporations mostly from the Alignment of reporting period in Thailand. The second quarter of 2018 included an additional month of income from Chile and the Canadian insurance business from the Alignment of reporting period with the Bank. Net gain on investment securities declined this quarter compared to last quarter. Gains on sale of real estate continued at a lower level this quarter compared to 2017. The Sale of Business in the fourth quarter of 2017 resulted in a gain that quarter and also contributed to lower wealth management fees.

Provision for credit losses

Provision for credit losses for 2018 is calculated in accordance with IFRS 9, while the provision for credit losses for 2017 was calculated in accordance with IAS 39. Prior period amounts have not been restated and therefore, the provision for credit losses and related ratios are not directly comparable.

Provision for credit losses has remained stable over the period. Asset quality has remained strong despite increased lending activity.

The provision for credit losses was $590 million this quarter, of which $637 million related to provision on impaired financial assets. In the prior quarter, Acquisition-related costs of $404 million (refer Non-GAAP Measures) were recognized in the provision for credit losses.

Non-interest expenses

Non-interest expenses increased this quarter due to the current year's acquisitions, as well as the impact of Acquisition-related costs. Non-interest expenses have generally trended upwards over the period, mostly to support business growth and the Bank's investments in acquisitions, strategic initiatives and in technology, partly offset by structural cost-reduction initiatives. There have also been increases in performance-based compensation. The first quarter of 2018 included a benefits remeasurement of $203 million, reducing that quarter's expenses.

Income taxes

The effective tax rate was 18.7% this quarter and averaged 20.5% over the period, with a range of 13.9% to 23.5%. In the second quarter of 2017, the tax rate was 13.9% reflecting a higher amount of tax-exempt dividends related to client-driven equity trading activities. Effective tax rates in other quarters were impacted by different levels of income earned in foreign jurisdictions, as well as the variability of tax-exempt dividend income.

BUSINESS LINE OVERVIEW

Business line results are presented on a taxable equivalent basis, adjusting for the following:

- The Bank analyzes revenue on a taxable equivalent basis (TEB) for business lines. This methodology grosses up tax-exempt income earned on certain securities reported in either net interest income or non-interest income to an equivalent before tax basis. A corresponding increase is made to the provision for income taxes; hence, there is no impact on net income. Management believes that this basis for measurement provides a uniform comparability of net interest income and non-interest income arising from both taxable and non-taxable sources and facilitates a consistent basis of measurement. While other banks also use TEB, their methodology may not be comparable to the Bank's methodology. A segment's revenue and provision for income taxes are grossed up by the taxable equivalent amount. The elimination of the TEB gross up is recorded in the Other segment.
- For business line performance assessment and reporting, net income from associated corporations, which is an after-tax number, is adjusted to normalize for income taxes. The tax normalization adjustment grosses up the amount of net income from associated corporations and normalizes the effective tax rate in the business lines to better present the contribution of the associated corporations to the business line results.
- International Banking business segment results are analyzed on a constant dollar basis. Under constant dollar basis, prior period amounts are recalculated using current period average foreign currency rates eliminating the impact of foreign currency translation. The Bank believes that reporting in constant dollar is useful for readers in assessing ongoing business performance.

Below are the results of the Bank's three business operating segments for 2018.

CANADIAN BANKING

Canadian Banking reported net income attributable to equity holders of $4,364 million in 2018, up 7% from last year. Adjusting for Acquisition-related costs, net income was $4,416 million, up 8%. This reflects the contributions from acquisitions in the current year, partly offset by last year's gain on sale of HollisWealth ("Sale of Business") as well as lower gains on sale of real estate.

Solid growth in assets and deposits, along with improving margin driven primarily from the Bank of Canada interest rate increase, higher non-interest income and lower provision for credit losses contributed to strong growth in 2018. This was partly offset by higher non-interest expenses. Return on equity was 22.7%, compared with 22.8% last year. Adjusting for Acquisition-related costs, the return on equity was 23.0%.

INTERNATIONAL BANKING

International Banking reported net income attributable to equity holders of $2,573 million, up $183 million or 8% from last year. Adjusting for Acquisition-related costs, net income attributable to equity holders increased by $395 million or 16% to $2,819 million. Strong results in Latin America, including benefits from acquisitions, and Asia, complemented solid earnings in the Caribbean. The impact of the acquisitions and the benefit of one additional month of earnings, from the Alignment of the reporting period in Chile and Thailand, contributed 3% to the adjusted earnings growth. The remaining increase was driven by strong loan growth in Latin America, higher non-interest income, and lower taxes. This was partly offset by higher provision for credit losses and non-interest expenses, a lower net interest margin and the negative impact of foreign currency translation. Return on equity was 14.4% compared to 14.7% last year. Adjusting for Acquisition-related costs, the return on equity was 15.8%.

GLOBAL BANKING AND MARKETS

Global Banking and Markets reported net income attributable to equity holders of $1,758 million, a decrease of $60 million or 3% from last year. Lower income from capital markets businesses and higher expenses were partly offset by stronger results in corporate lending, as well as lower provision for credit losses. Return on equity was 16.0%, in line with the prior year.

KEY PERFORMANCE INDICATORS FOR ALL BUSINESS LINES

Management uses a number of key metrics to monitor business line performance:

- Net income
- Return on equity
- Productivity ratio
- Provision for credit losses ratio

T17 Financial performance

For the year ended October 31, 2018 ($millions)	Canadian Banking	International Banking	Global Banking and Markets	Other(1)	Total
Net interest income(2)	$ 7,898	$ 7,322	$ 1,454	$ (483)	$ 16,191
Non-interest income(2)	5,452	4,111	3,074	(53)	12,584
Total revenue(2)	13,350	11,433	4,528	(536)	28,775
Provision for credit losses	794	1,867	(50)	–	2,611
Non-interest expenses	6,654	6,111	2,233	60	15,058
Provision for income taxes (2)	1,538	706	587	(449)	2,382
Net income	$ 4,364	$ 2,749	$ 1,758	$ (147)	$ 8,724
Net income attributable to non-controlling interests in subsidiaries	–	176	–	–	176
Net income attributable to equity holders of the Bank	$ 4,364	$ 2,573	$ 1,758	$ (147)	$ 8,548
Return on equity(%) (3)	22.7%	14.4%	16.0%	–%	14.5%
Total average assets ($ billions)	$ 342	$ 168	$ 321	$ 115	$ 946
Total average liabilities ($ billions)	$ 254	$ 131	$ 265	$ 232	$ 882

(1) The Other category represents smaller operating segments, including Group Treasury, and other corporate adjustments that are not allocated to an operating segment. Corporate adjustments include the net residual in matched maturity transfer pricing, the elimination of the tax-exempt income gross-up reported in net interest income, non-interest income and provision for income taxes, and differences in the actual amount of costs incurred and charged to the operating segments.
(2) Taxable equivalent basis. Refer to Glossary.
(3) Refer to Glossary.

For the year ended October 31, 2017 ($millions)	Canadian Banking	International Banking	Global Banking and Markets	Other(1)	Total
Net interest income(2)	$ 7,363	$ 6,726	$ 1,336	$ (390)	$ 15,035
Non-interest income(2)	5,488	3,688	3,288	(344)	12,120
Total revenue(2)	12,851	10,414	4,624	(734)	27,155
Provision for credit losses	913	1,294	42	–	2,249
Non-interest expenses	6,487	5,664	2,160	319	14,630
Provision for income taxes (2)	1,387	828	604	(786)	2,033
Net income	$ 4,064	$ 2,628	$ 1,818	$ (267)	$ 8,243
Net income attributable to non-controlling interests in subsidiaries	–	238	–	–	238
Net income attributable to equity holders of the Bank	$ 4,064	$ 2,390	$ 1,818	$ (267)	$ 8,005
Return on equity(%) (3)	22.8%	14.7%	16.0%	–%	14.6%
Total average assets ($ billions)	$ 323	$ 148	$ 336	$ 106	$ 913
Total average liabilities ($ billions)	$ 244	$ 115	$ 267	$ 228	$ 854

(1) The Other category represents smaller operating segments, including Group Treasury, and other corporate adjustments that are not allocated to an operating segment. Corporate adjustments include the net residual in matched maturity transfer pricing, the elimination of the tax-exempt income gross-up reported in net interest income, non-interest income and provision for income taxes, and differences in the actual amount of costs incurred and charged to the operating segments.
(2) Taxable equivalent basis. Refer to Glossary.
(3) Refer to Glossary.

For the year ended October 31, 2016 ($millions)	Canadian Banking	International Banking	Global Banking and Markets	Other(1)	Total
Net interest income(2)	$ 7,024	$ 6,359	$ 1,293	$ (384)	$ 14,292
Non-interest income(2)	5,164	3,482	3,139	273	12,058
Total revenue(2)	12,188	9,841	4,432	(111)	26,350
Provision for credit losses	832	1,281	249	50	2,412
Non-interest expenses	6,324	5,523	2,040	653	14,540
Provision for income taxes (2)	1,296	707	572	(545)	2,030
Net income	$ 3,736	$ 2,330	$ 1,571	$ (269)	$ 7,368
Net income attributable to non-controlling interests in subsidiaries	–	251	–	–	251
Net income attributable to equity holders of the Bank	$ 3,736	$ 2,079	$ 1,571	$ (269)	$ 7,117
Return on equity(%) (3)	22.0%	12.8%	12.6%	–%	13.8%
Total average assets ($ billions)	$ 309	$ 143	$ 351	$ 111	$ 914
Total average liabilities ($ billions)	$ 232	$ 109	$ 270	$ 247	$ 858

(1) The Other category represents smaller operating segments, including Group Treasury, and other corporate adjustments that are not allocated to an operating segment. Corporate adjustments include the net residual in matched maturity transfer pricing, the elimination of the tax-exempt income gross-up reported in net interest income, non-interest income and provision for income taxes, and differences in the actual amount of costs incurred and charged to the operating segments.
(2) Taxable equivalent basis. Refer to Glossary.
(3) Refer to Glossary.

Canadian Banking

2018 Achievements

- **Customer Focus -** Deliver an excellent customer experience across our businesses and channels.
  - Achieved the highest customer satisfaction among mid-sized banks at Tangerine, for the seventh straight year in the 2018 J.D. Power Canadian Retail Banking Customer Satisfaction Study.
  - Expanded our strategic partnership with Maple Leaf Sports and Entertainment (MLSE), including the renaming of one of North America'stop-ranked sports and entertainment venues to the Scotiabank Arena; further strengthening our relationship as the official sponsor of the Toronto Maple Leafs, leveraging Tangerine to become the exclusive bank of the Toronto Raptors, and forming a key philanthropic partnership with the MLSE Foundation.
  - Continued to see customer satisfaction measures, as determined by the Net Promoter Score (NPS), improve across all major channels – branches, contact centre, and digital – driven by investments and enhancements across all of our key customer journeys.
  - Solid customer growth and progressed toward achieving our goal of adding one million new primary customers over the medium term.
  - Introduced new branch advisor role specializing in investment advice and expanded mobile sales force, which has built strong momentum and focus throughout the year.
- **Structural Cost Transformation -** Reduce structural costs to build the capacity to invest in our businesses and technology.
  - Exceeded the 2018 structural cost reduction target and progressed well towards our productivity ratio goal of <49% over the medium term.
- **Digital Transformation -** Leverage digital as the foundation of all our activities to improve our operations, enhance the client experience, and drive digital adoption.
  - Mobile has surpassed Online Banking, becoming our leading channel for financial transactions.
  - iTrade ranked highest amongst Big five banks in the Globe and Mail annual ranking of online brokerage, as a result of our enhanced online brokerage client experience across onboarding and servicing.
- **Business Mix Alignment -** Optimize our business mix by growing higher margin assets, building core deposits, and earning higher fee income.
  - Acquired Jarislowsky Fraser and MD Financial – increasing our institutional and private client focus, and positioning us as the largest private investment counselor in Canada.
  - Earned five Thomas Reuters Lipper Fund Awards for Dynamic Funds and ScotiaFunds offerings, recognizing strong and consistent risk-adjusted performance relative to peers.
  - Launched four strategic ETF offerings to help better serve our diverse client base.
  - Momentum Visa Infinite ranked #1 cashback credit card, Scene Student Visa ranked #1 student credit card, and Gold American Express ranked #2 for both the travel and rewards credit card categories by MoneySense magazine.
  - Launched Scotia Passport Visa Infinite, a premium travel credit card that offers no currency conversion fees – a first amongst major financial institutions.
- **Leadership and Employee Engagement -** Grow and diversify talent and engage employees through a performance-oriented culture.
  - Ranked one of the world's top 25 workplaces by *Great Place to Work*, a Fortune partner.

Business Profile

Canadian Banking provides a full suite of financial advice and banking solutions, supported by an excellent customer experience, to over 10 million Retail, Small Business, Commercial Banking, and Wealth Management customers. It serves these customers through its network of 955 branches and more than 3,644 automated banking machines (ABMs), as well as internet, mobile and telephone banking and specialized sales teams. Canadian Banking also provides an alternative self-directed banking solution to over two million Tangerine Bank customers. Canadian Banking is comprised of the following areas:

- Retail and Small Business Banking provides financial advice and solutions and day-to-day banking products, including debit cards, chequing accounts, credit cards, investments, mortgages, loans and related creditor insurance products to individuals and small businesses. Tangerine Bank provides everyday banking products, including chequing and saving accounts, credit cards, investments, mortgages and loans to self-directed customers.
- Commercial Banking delivers advice and a full suite of lending, deposit, cash management and trade finance solutions to medium and large businesses, including automotive dealers and their customers to whom we provide retail automotive financing solutions.
- Wealth Management provides a suite of investment and wealth management advice, services, products and solutions to customers, as well as advisors. The asset management business is focused on developing investment solutions for both retail and institutional investors. The customer facing wealth businesses, including private customer, online brokerage, full-service brokerage, pensions, and institutional customer services, are focused on providing a full suite of wealth management solutions to our customers.

Strategy

Canadian Banking continues to execute on a long-term strategy to deliver abest-in-class customer experience, grow its primary banking relationships, and outperform competitors in earnings growth through customer experience, business mix alignment, operational improvements and digital transformation.

2019 Priorities

- **Customer focus:** Deliver a leading customer experience and deepen relationships with customers across our businesses and channels.
- **Productivity:** Reduce structural costs while driving tangible revenue initiatives in order to build the capacity to invest in our businesses and technology.
- **Digital transformation:** Leverage digital as the foundation of all our activities to improve our operations, enhance the client experience, and drive digital adoption.
- **Business mix alignment:** Optimize our business mix by growing higher margin assets, building core deposits, and expanding fee based income.
- **Leadership and employee engagement:** Grow and diversify talent and engage employees through a performance-oriented culture.

T18 Canadian Banking financial performance

($ millions)	2018(1)	2017	2016
Reported results			
Net interest income(2)	**$ 7,898**	$ 7,363	$ 7,024
Non-interest income(2)(3)	**5,452**	5,488	5,164
Total revenue(2)	**13,350**	12,851	12,188
Provision for credit losses	**794**	913	832
Non-interest expenses	**6,654**	6,487	6,324
Income tax expense	**1,538**	1,387	1,296
Net income	**$ 4,364**	$ 4,064	$ 3,736
Net income attributable to non-controlling interests in subsidiaries	**–**	–	–
Net income attributable to equity holders of the Bank	**$ 4,364**	$ 4,064	$ 3,736
Key ratios and other financial data			
Return on equity(4)	**22.7%**	22.8%	22.0%
Productivity(2)	**49.8%**	50.5%	51.9%
Net interest margin(5)	**2.44%**	2.40%	2.38%
Provision for credit losses - performing (Stages 1 and 2)	**$ 8**	n/a	n/a
Provision for credit losses - impaired (Stage 3)	**$ 786**	n/a	n/a
Provision for credit losses as a percentage of average net loans and acceptances	**0.24%**	0.29%	0.28%
Provision for credit losses on impaired loans as a percentage of average net loans and acceptances	**0.24%**	0.29%	0.28%
Net write-offs as a percentage of average net loans and acceptances	**0.24%**	0.32%	0.24%
Selected Consolidated Statement of Financial Position data (average balances)			
Earning assets	**$ 334,103**	$ 315,916	$ 302,648
Total assets	**341,825**	322,712	309,232
Deposits	**240,855**	233,260	224,006
Total liabilities	**253,591**	243,748	232,498
Other ($ billions)			
Assets under administration	**$ 355**	$ 315	$ 318
Assets under management	**$ 225**	$ 155	$ 145

(1) Theamounts for the year ended October 31, 2018, have been prepared in accordance with IFRS 9; prior year amounts have not been restated (refer to Notes 3 and 4 in the consolidated financial statements).
(2) Taxableequivalent basis (TEB).
(3) Includesnet income from investments in associated corporations of $93 (2017 – $66; 2016 – $78).
(4) Referto Glossary.
(5) Netinterest income (TEB) as % of average earning assets excluding bankers acceptances.

T18A Adjusted Canadian Banking financial performance(1)

($ millions)	2018	2017	2016
Adjusted results			
Net interest income	**$ 7,898**	$ 7,363	$ 7,024
Non-interest income	**5,452**	5,488	5,164
Total revenue	**13,350**	12,851	12,188
Provision for credit losses	**794**	913	832
Non-interest expenses	**6,583**	6,452	6,270
Income before taxes	**5,973**	5,486	5,086
Income tax expense	**1,557**	1,396	1,311
Net income	**$ 4,416**	$ 4,090	$ 3,775
Net income attributable to non-controlling interests in subsidiaries (NCI)	**–**	–	–
Net income attributable to equity holders	**$ 4,416**	$ 4,090	$ 3,775

(1) Referto Non-GAAP Measures for the reconciliation of Reported and Adjusted results.

MANAGEMENT'S DISCUSSION AND ANALYSIS

Financial Performance

Net income

Canadian Banking reported net income attributable to equity holders of $4,364 million in 2018, an increase of $300 million or 7%. Adjusting for Acquisition-related costs, net income was $4,416 million, an increase of $326 million or 8%. Lower gains on sale of real estate and impact from last year's gains on Sale of Business were partially offset by the current year acquisitions and the Alignment of reporting period, which combined reduced net income growth by 4%.

Strong growth in assets and continued momentum in deposits, along with margin expansion, focus on cost management and lower provisions for credit losses contributed to solid growth in 2018. Return on equity was 22.7%, in line with prior year.

Average assets and liabilities

Average assets grew $19 billion or 6% to $342 billion. The growth included $10 billion or 5% in residential mortgages, $6 billion or 14% in business loans and acceptances, and $3 billion or 4% in personal loans.

Average liabilities increased $10 billion or 4%, including growth of $2 billion or 2% in retail chequing and savings deposits. As well, there was growth of $4 billion or 5% in non-personal deposits.

Assets under management (AUM) and assets under administration (AUA)

AUM of $225 billion increased $70 billion or 45% primarily due to the impact of acquisitions. AUA of $355 billion increased $40 billion or 12% primarily due to the impact of acquisitions.

Revenues

Net interest income increased $535 million or 7% to $7,898 million. The increase was driven by a four basis point increase in the margin to 2.44%, strong growth in assets and continued momentum in deposits. The increase in margin was driven by retail deposits and the impact of interest rate increases by the Bank of Canada.

Non-interest income decreased $36 million or 1%. The impact of last year's Sale of Business offset by the contributions from current year acquisitions reduced non-interest income by 4%. Lower gains on sale of real estate were only partly offset by the benefit of the Alignment of reporting period, which reduced non-interest income by a further 3%. The remaining increase was driven by strong growth in credit cards, retail and commercial banking, insurance and wealth management businesses.

Retail & Small Business Banking

Total retail and small business banking revenues were $7,748 million, up $400 million or 5%. Net interest income grew $340 million or 6%, primarily driven by an improvement in the margin and solid growth in residential mortgages and continued momentum in deposit growth. Non-interest income increased $60 million or 3%, primarily due to growth in credit card revenues, insurance revenues and the benefit of the Alignment of reporting period, which was partly offset by lower gains on sale of real estate.

Commercial Banking

Total commercial banking revenues increased $183 million or 8% to $2,358 million. Net interest income rose $183 million or 11% due mainly to growth in loans, business operating accounts and GICs, and an improvement in the margin. Non-interest income remained flat due to higher card and acceptance fees, offset by lower securities gains.

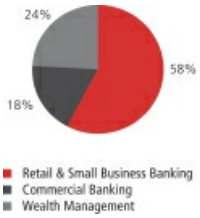
Wealth Management

Total wealth management revenues were $3,244 million, a decrease of $84 million or 3% primarily due to the impact of the Sale of Business. Net interest income rose $13 million or 3% mainly due to growth in deposits and loans and improvements in margin. Non-interest income was down $97 million or 3%, due to the gain on Sale of Business and lower revenue as a result. This is offset by the impact of acquisitions of Jarislowsky Fraser and MD Financial, higher fee based brokerage and higher mutual funds revenues.

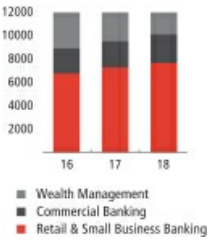
Non-interest expenses

Non-interest expenses were $6,654 million, up $167 million or 3%. Adjusting for Acquisition-related costs, non-interest expenses were up 2%. The impact of the last year's Sale of Business offset by the current year acquisitions, increased non-interest expenses by a further 3%. This increase was due primarily to higher investments in technology and regulatory initiatives, partly offset by benefits realized from cost-reduction initiatives. Operating leverage was a positive 1.3% or 1.9% adjusting for Acquisition-related costs.

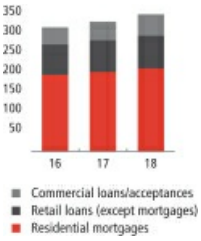
C6 Total revenue



C7 Total revenue by sub-segment
$ millions



C8 Average loans and acceptances
$ billions



C9 Canadian wealth management asset growth
$ billions, as at October 31

Provision for credit losses

Provision for credit losses for 2018 is calculated in accordance with IFRS 9, while the provision for credit losses for 2017 was calculated in accordance with IAS 39.

Provision for credit losses was $794 million, compared to $913 million. The provision for credit losses ratio improved to 24 basis points, a decrease of five basis points.

Provision for income taxes

The effective tax rate increased to 26.1%, compared to 25.4% primarily from lower gains on sale of real estate.

Outlook

Canadian Banking's growth in 2019 is expected to be driven in part by a favourable economic outlook and rising interest rate environment in Canada. Assets are projected to grow across retail and business banking products. Deposits are also expected to grow across retail chequing and savings, and business banking. Margins are expected to strengthen during 2019. Non-interest revenues are expected to grow underpinned by our wealth acquisitions. Integrating MD Financial and Jarislowsky Fraser and driving operational improvements are key priorities for 2019.

International Banking

2018 Achievements

- **Customer Focus**
  - Continued solid primary customer growth in retail and commercial. Retail customer growth maintains its steady trend towards our target of adding one million new primary customers.
  - Customer Pulse, our proprietary customer experience system, implemented across all channels in Pacific Alliance countries and more recently in Jamaica, Trinidad & Tobago and Dominican Republic. Improved customer satisfaction scores across all channels in all countries.
  - Recognized for the second year in a row as the Latin American Bank of the Year by Retail Banker International.
- **Leadership**
  - Significant progress in women in leadership, achieving targets for women in Director pool and strong results at the Vice President level.
  - Continued to strengthen our leadership team. Notable hires include new Country Head in Colombia and the new Global Head of Consumer Analytics.
- **Structural Cost Transformation**
  - Exceeded the 2018 structural cost reduction target and progressed well towards our adjusted productivity ratio goal of <51% by 2020 to 2022.
  - Delivered positive operating leverage.
- **Digital Transformation**
  - Fully operationalized our digital factories in Mexico, Peru, Chile and Colombia, rolling out innovative digital and mobile products, services and applications that meet the needs of our customers.
  - Achieved good progress on digital targets, with solid uplift in digital sales, digital adoption and transaction migration.
  - Continued attracting top digital talent with innovation expertise to the Bank.
- **Business Mix Alignment**
  - Acquired attractive assets with high strategic value in Chile and Colombia to grow our franchise and strengthen our long-term competitive position.
- **Strong Risk Culture**
  - Continued to strengthen risk management and collections capabilities across our footprint.

Business Profile

International Banking has a strong and diverse franchise with more than 15 million Retail, Corporate and Commercial customers. We have almost 58,000 employees and our customers are served by a network of more than 1,800 branches as well as business support and customer contact centres.

International Banking continues to be an attractive growth opportunity for the Bank with a geographical footprint focused on the Pacific Alliance countries of Mexico, Colombia, Peru and Chile. The Pacific Alliance countries have a combined GDP that is more than double the size of Canada's, a young population, rising middle class, growing economies and a sound banking environment.

Our franchise is supported by a solid, mature and profitable business in the Caribbean and Central America that we plan to continue to make successful by optimizing operations, prudently reducing costs while delivering increased customer profitability.

Strategy

International Banking continues to execute its strategy that is aligned with the all-Bank strategic priorities of: customer focus, leadership, structural cost transformation, digital transformation, business mix alignment and strong risk culture. Underpinning this strategy is focus on growth in the Pacific Alliance and optimizing operations in Central America and the Caribbean.

2019 Priorities

To build on our success and capitalize on opportunities in our markets, we are focused on executing the following strategic initiatives:

- **Customer focus:** Leverage our investments in our new customer experience system to keep strengthening our service oriented culture.
- **Leadership:** Continue attracting and developing exceptional and diverse leadership talent to keep pace with the changing needs of an increasingly competitive global market.
- **Structural cost transformation:** Prudently continue to deliver cost reductions.
- **Digital transformation:** Continue accelerating our digital transformation to gain scale and deliver business impact.
- **Business mix alignment:** Continue achieving profitable growth by increasing core deposits, growing our insurance revenues and integrating strategic acquisitions into our operations.
- **Strong risk culture:** Improving our risk management practices by strengthening our leadership team and continued investment in technology.

T19 International Banking financial performance

($ millions)	2018(1)	2017	2016
Reported results			
Net interest income(2)	**$ 7,322**	$ 6,726	$ 6,359
Non-interest income(2)(3)(4)(5)	**4,111**	3,688	3,482
Total revenue(2)	**11,433**	10,414	9,841
Provision for credit losses(6)	**1,867**	1,294	1,281
Non-interest expenses	**6,111**	5,664	5,523
Income tax expense(2)	**706**	828	707
Net income	**$ 2,749**	$ 2,628	$ 2,330
Net income attributable to non-controlling interests in subsidiaries	**176**	238	251
Net income attributable to equity holders of the Bank	**$ 2,573**	$ 2,390	$ 2,079
Key ratios and other financial data			
Return on equity(7)	**14.4%**	14.7%	12.8%
Productivity(2)	**53.5%**	54.4%	56.1%
Net interest margin(8)	**4.65%**	4.79%	4.71%
Provision for credit losses – performing (Stages 1 and 2)	**$ 270**	n/a	n/a
Provision for credit losses – impaired (Stage 3)	**$ 1,597**	n/a	n/a
Provision for credit losses as a percentage of average net loans and acceptances (9)	**1.51%**	1.21%	1.26%
Provision for credit losses on impaired loans as a percentage of average net loans and acceptances	**1.28%**	1.21%	1.26%
Net write-offs as a percentage of average net loans and acceptances	**1.25%**	1.31%	1.06%
Selected Consolidated Statement of Financial Position data (average balances)			
Earning assets(10)	**$ 157,513**	$ 140,471	$ 135,167
Total assets	**167,694**	147,537	142,582
Deposits	**103,629**	95,232	87,508
Total liabilities	**130,789**	114,694	109,302
Other ($ billions)			
Assets under administration	**$ 89**	$ 88	$ 86
Assets under management	**$ 58**	$ 53	$ 47

(1) The amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior year amounts have not been restated (refer to Notes 3 and 4 in the consolidated financial statements).
(2) Taxable equivalent basis.
(3) Includes net income from investments in associated corporations of $643 (2017 – $482; 2016 – $473).
(4) Includes BBVA Chile third quarter 2018 before tax earnings of $21. BBVA Chile fourth quarter earnings have been reflected in all P&L lines.
(5) Includes one additional month of earnings relating to Thanachart Bank of $30 (after tax and NCI $22), and Chile of $36 (after tax and NCI $26) for the year ended October 31, 2018.
(6) Includes Day 1 provision for credit losses on acquired performing loans of $404 for the year ended October 31, 2018 (October 31, 2017 – nil).
(7) Refer to Glossary.
(8) Net interest income (TEB) as % of average earning assets excluding bankers acceptances.
(9) Provision for credit losses as a percentage of average net loans and acceptances adjusted for Day 1 PCL was 1.18% in 2018.
(10) Includes bankers' acceptances.

T19A Adjusted International Banking financial performance(1)

($ millions)	2018	2017	2016
Adjusted results			
Net interest income	**$ 7,322**	$ 6,726	$ 6,359
Non-interest income	**4,111**	3,688	3,482
Total revenue	**11,433**	10,414	9,841
Provision for credit losses	**1,463**	1,294	1,281
Non-interest expenses	**5,995**	5,617	5,473
Income before taxes	**3,975**	3,503	3,087
Income tax expense	**858**	841	720
Net income	**$ 3,117**	$ 2,662	$ 2,367
Net income attributable to non-controlling interests (NCI)	**298**	238	251
Net income attributable to equity holders	**$ 2,819**	$ 2,424	$ 2,116

(1) Refer to Non-GAAP measures for reconciliation of Reported and Adjusted results.

Financial Performance

Net income

Net income attributable to equity holders was $2,573 million, an increase of $183 million or 8%. Adjusting for Acquisition-related costs, net income was $2,819 million up $395 million or 16%. Strong results in Latin America, including benefits from acquisitions, and Asia, complemented solid earnings in Caribbean. The impact of the acquisitions and the benefit of one additional month of earnings, from the Alignment of the reporting period in Chile and Thailand, contributed 3% to the adjusted earnings growth. The remaining increase was driven by strong loan growth in Latin America, higher non-interest income, and lower taxes. This was partly offset by higher provision for credit losses and non-interest expenses, a lower net interest margin, and the negative impact of foreign currency translation.

Financial Performance on Constant Dollar Basis

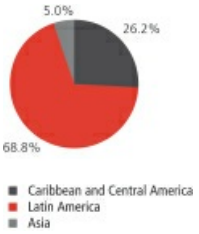
The discussion below on the results of operations is on a constant dollar basis that excludes the impact of foreign currency translation, and is a non-GAAP financial measure (refer to Non-GAAP Measures). The Bank believes that reporting in constant dollars is useful for readers in assessing ongoing business performance. Ratios are on a reported basis.

T20 International Banking financial performance on constant dollar basis

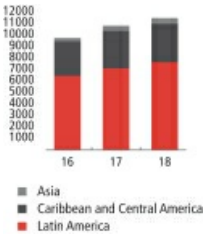
($ millions)	2018(1)	2017	2016
Net interest income(2)	**$ 7,322**	$ 6,626	$ 6,191
Non-interest income(2)(3)	**4,111**	3,653	3,440
Total revenue(2)	**11,433**	10,279	9,631
Provision for credit losses	**1,867**	1,276	1,257
Non-interest expenses	**6,111**	5,594	5,388
Income tax expense(2)	**706**	815	790
Net income on constant dollar basis	**$ 2,749**	$ 2,594	$ 2,196
Net income attributable to non-controlling interests in subsidiaries on a constant dollar basis	**176**	240	260
Net income attributable to equity holders of the Bank on a constant dollar basis	**$ 2,573**	$ 2,354	$ 1,936
Selected Consolidated Statement of Financial Position data (average balances)			
Total assets	**167,694**	145,400	138,548
Total liabilities	**130,789**	113,267	106,306

(1) The amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior year amounts have not been restated (refer to Notes 3 and 4 in the consolidated financial statements).
(2) Taxable equivalent basis.
(3) Includes net income from investments in associated corporations of $643 (2017 – $511; 2016 – $498).

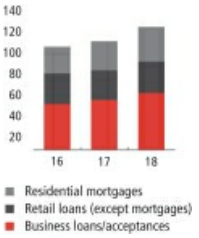
C10 Total revenue



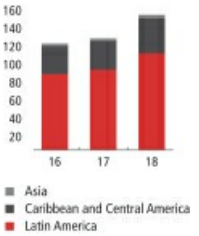
C11 Total revenue by region $ millions



C12 Average loans and acceptances $ billions



C13 Average earning assets(1) by region $ billions



(1) Average earning assets excluding bankers acceptances

Net income

Net income attributable to equity holders was $2,573 million, an increase of $219 million or 9%. Adjusting for Acquisition-related costs, net income was $2,819 million, up $432 million or 18%. Strong results in Latin America, including the impact of acquisitions, and Asia, complemented solid earnings in Caribbean. The impact of the acquisitions and the benefit of one additional month of earnings, from the Alignment of the reporting period in Chile and Thailand contributed 3% to the adjusted earnings growth. The remaining increase was driven by strong loan growth in Latin America, higher non-interest income, and lower taxes. This was partly offset by higher provision for credit losses and non-interest expenses, and a lower net interest margin.

Average assets and liabilities

Average assets of $168 billion increased $22 billion or 15% driven by strong retail and commercial loan growth, primarily in Latin America, partly due to acquisitions. Commercial loan growth was 16% and retail loan growth was 15%. Average liabilities increased $18 billion or 15% to $131 billion due to strong deposit growth in Pacific Alliance, partly due to acquisitions. Commercial and retail deposits increased 11% and 9% respectively.

Revenues

Total revenues of $11,433 million increased $1,154 million or 11%. Net interest income was $7,322 million, up 10% driven by strong retail and commercial loan growth, including a 3% impact of acquisitions, partly offset by a lower net interest margin. The net interest margin decreased 14 basis points to 4.65% due primarily to the impact of acquisitions and deposit rates. Non-interest income increased $458 million or 13% to $4,111 million. Five percent of the increase is related to the impact of acquisitions and the benefit of Alignment of reporting period. The remaining increase was due primarily to higher banking, wealth management and credit card fees, an increased contribution from associated corporations, and higher trading revenues.

Latin America

Total revenues of $7,861 million increased 14% from last year. Net interest income increased $670 million or 14%, driven by strong asset growth, including a 4% impact of acquisitions, partly offset by a lower net interest margin. The net interest margin decreased 19 basis points to 4.66% due mainly to the impact of acquisitions. Non-interest income increased $287 million or 13%. The impact of acquisitions and the benefit of Alignment of reporting period increased non-interest income by 6%. The remaining 7% increase was due primarily to higher banking, wealth management, credit card fees and trading revenues.

Caribbean and Central America

Total revenues were $2,996 million, up 2% over last year. Net interest income was up $26 million or 1%. Non-interest income was up $44 million or 5% as a result of good growth in banking, wealth management and insurance revenues.

Asia

Total revenues were $576 million, up 28% versus last year, driven by higher contributions from Thanachart Bank, partly due to the benefit of Alignment of reporting period, and Bank of Xi'an.

Non-interest expenses

Non-interest expenses increased $517 million or 9% to $6,111 million. Adjusting for Acquisition-related costs, non-interest expenses were up 8%. Three percent of the increase related to acquisitions. The remaining increase was due primarily to business volume growth, inflation, higher technology costs, partly offset by benefits from cost-reduction initiatives. Operating leverage was a positive 1.9%, or 3.1% adjusting for Acquisition-related costs.

Provision for credit losses

The provision for credit losses was $1,867 million compared to $1,276 million. Adjusting for the Day 1 provision on acquired performing loans of $404 million, the provision for credit losses increased $187 million due primarily to higher retail provision driven by higher volumes, including acquisitions, and the benefit of the credit mark last year, offset by lower commercial provision. The adjusted provision for credit losses ratio was 118 basis points, a decrease of three basis points.

Provision for income taxes

The effective tax rate was 20.4% compared to 24.0% due mainly to higher tax benefits in Mexico and lower taxes in certain foreign jurisdictions.

Outlook

In 2019, International Banking will continue to leverage its diversified footprint – with particular emphasis on the Pacific Alliance – and focus on successfully integrating recent acquisitions in Chile, Peru, Colombia and Dominican Republic.

Growth prospects are improving in many of the Pacific Alliance countries, as economic activity generally is expected to improve relative to last year. This is most true in Peru, where the rise in commodity prices over the past year and a new government are leading to large increases in growth rate relative to 2017. In Colombia, an increase in oil prices over the past year is providing a strong impulse to business investment, which is expected to be further strengthened as confidence in the new government takes hold. Strengthening business activity will add to already solid household spending. In Chile, GDP growth is expected to moderate somewhat from the strong levels witnessed in 2018 but should still exceed 3%. In Mexico, the economy remains moderately strong, as activity continues to benefit from robust growth in the US and the rest of the world. The political transition is key to Mexican prospects.

Margins and credit quality in International Banking are expected to remain stable with the level in the fourth quarter 2018. Expense management and delivery of positive operating leverage remain key business priorities.

Global Banking and Markets

2018 Achievements

In 2018, Scotiabank GBM continued to build its franchise as a leading wholesale bank in Canada, the United States and the Pacific Alliance, with a focused presence in Europe and Asia. In particular, Scotiabank GBM made significant progress on its key priorities:

- Enhance Customer Focus
  - Strengthened collaborative efforts across the platform to bring the entire Bank's capabilities to serve clients' holistic needs.
- Become Leaders in our Markets
  - Deepened the Bank's presence in the United States. This key global financial market is an important bridge for trade and investment flows between Canada and the Pacific Alliance.
  - Built out capabilities to provide a more comprehensive and competitive offering across the Pacific Alliance, connected to international markets.
- Focus on Leadership and Talent
  - Invested in people and strengthened our leadership team with key hires in Investment Banking and Global Capital Markets.
  - Proudly recognized with the 2018 Excellence in Innovation Award by Women in Capital Markets. This award honours companies who have approached gender diversity with an innovative lens and taken bold steps to improve diversity and inclusion.
  - Consistently fostered a workplace culture where people perform at their best, develop to their potential and act in line with the Bank's values of respect, integrity, passion and accountability.
- Optimize Effectiveness
  - Deployed industry-leading technologies and agile processes to modernize legacy platforms and create digital solutions that improve automation, drive operational efficiency and provide an excellent customer experience.
  - Continued to invest in Anti-Money Laundering and Anti-Terrorist Financing capabilities for the protection of our clients and our business.
  - Invested in analytics and artificial intelligence to speed up our processes, increase our accuracy and add new intelligence to deliver results for our clients quickly and more efficiently.
  - Became one of 72 global banks to offer clients the ability to track the status of wire transfer payments in real time using the SWIFT Global Payments Innovation (GPI) initiative.

Deal Highlights

- Acted as Financial Advisor to a consortium of investors led by BC Partners and including Ontario Teachers' Pension Plan on the C$5.125 billion recapitalization of GFL Environmental, the largest private LBO for a Canadian company.
- Acted as Mandated Lead Arranger and Bookrunner of AUD $4 billion loan facilities to support the AUD $9.3 billion (US $6.7 billion) acquisition of a 51% equity interest in WestConnex from the New South Wales Government by Sydney Transport Partners (STP) consortium, formed by clients Transurban, CPPIB, Australian Super and ADIA.
- Financial advisor to, and Joint Bookrunner for, Royal Dutch Shell on its US $3.3 billion sale of shares in Canadian Natural Resources.
- Administrative Agent and Joint Bookrunner on a US $2.25 billion term loan facility for AT&T.
- Joint Bookrunner on a US $2 billion debt issuance by Petroleos Mexicanos of January 2029 Notes.
- Joint Bookrunner for a 2-Tranche US $1.6 billion-equivalent CLP Euroclearable bond transaction by the Republic of Chile.
- Acted as exclusive M&A Financial Advisor and provided acquisition financing commitment to Actis on its US $1.3 billion acquisition of Intergen Mexico. Acted as Joint Global Coordinator and Bookrunner for new entity, Cometa Energia, S.A. de C.V., on US $860 million senior secured notes.
- Acted as Financial Advisor to Brookfield Infrastructure on the sale of its 27.8% interest in Transelec to China Southern Power Grid for US $1.3 billion.
- Bookrunner for C$250 million Thames Water's inaugural Maple issuance (Europe).
- Joint Lead Manager on the C$1 billion World Bank Sustainable Development Bond to raise awareness for the significant and long-lasting benefits of investing in the health and nutrition of women, adolescents and children.
- Lead left Bookrunner on a Brookfield Renewable Partner's inaugural C$300 million Green Bond due 2029.
- Provided an enhanced share disposition strategy and acted as the sole equity derivative provider for Metro's C$232 million disposition of third party shares.

Business Profile

Global Banking and Markets (GBM) conducts Scotiabank's wholesale banking business with corporate, government and institutional investor clients. GBM is a full-service wholesale bank in priority markets of Canada, the United States and Latin America. GBM also offers a range of products and services in select markets in Europe and Asia-Pacific.

GBM provides clients with: corporate lending; transaction banking (including trade finance and cash management); investment banking (including corporate finance and mergers & acquisitions); fixed income and equity underwriting, sales, trading and research; prime services (prime brokerage and securities lending); foreign exchange sales and trading; commodities derivatives sales and trading; and collateral management.

Strategy

Scotiabank Global Banking and Markets (GBM) will build its franchise as a leading wholesale bank throughout its global footprint by providing corporate clients with lending services, transaction banking, investment banking advice and access to capital markets.

2019 Priorities

- **Strategic Approach to Lending:** Scotiabank GBM is focused on up-tiering corporate relationships and increasing our lending penetration where we have greater opportunities to win ancillary business.
- **Strengthening Investment Banking:** Scotiabank GBM will continue its multi-year buildout to expand regional expertise for investment banking and equity capital markets to focus on local and cross-border M&A and advisory deals.

- **Deeper penetration of Pacific Alliance:** Scotiabank GBM will meaningfully invest in the Pacific Alliance countries to become a true market leader in local and cross border banking and capital markets capabilities.

T21 Global Banking and Markets financial performance

($ millions)	2018(1)	2017	2016
Net interest income(2)	**$ 1,454**	$ 1,336	$ 1,293
Non-interest income(2)	**3,074**	3,288	3,139
Total revenue(2)	**4,528**	4,624	4,432
Provision for credit losses	**(50)**	42	249
Non-interest expenses	**2,233**	2,160	2,040
Income tax expense(2)	**587**	604	572
Net income	**$ 1,758**	$ 1,818	$ 1,571
Net income attributable to non-controlling interests in subsidiaries	**–**	–	–
Net income attributable to equity holders of the Bank	**$ 1,758**	$ 1,818	$ 1,571
Key ratios and other financial data			
Return on equity(3)	**16.0%**	16.0%	12.6%
Productivity(2)	**49.3%**	46.7%	46.0%
Net interest margin(4)(5)	**1.83%**	1.75%	1.67%
Provision for credit losses – performing (Stages 1 and 2)	**$ (22)**	n/a	n/a
Provision for credit losses – impaired (Stage 3)	**$ (28)**	n/a	n/a
Provision for credit losses as a percentage of average net loans and acceptances	**(0.06)%**	0.05%	0.30%
Provision for credit losses on impaired loans as a percentage of average net loans and acceptances	**(0.03)%**	0.05%	0.30%
Net write-offs as a percentage of average net loans and acceptances	**0.03%**	0.11%	0.21%
Selected Consolidated Statement of Financial Position data (average balances)			
Trading assets	**$ 98,130**	$ 103,861	$ 103,316
Loans and acceptances	**81,838**	79,937	81,662
Earning assets	**282,997**	291,870	298,664
Total assets	**320,850**	335,599	350,627
Deposits	**86,260**	77,158	77,261
Total liabilities	**264,983**	267,377	269,755

(1) The amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior year amounts have not been restated (refer to Notes 3 and 4 in the consolidated financial statements).
(2) Taxable equivalent basis.
(3) Refer to Glossary.
(4) Business Banking only.
(5) Net interest income (TEB) as % of average earning assets excluding bankers' acceptances.

Financial Performance

Net income

Global Banking and Markets reported net income attributable to equity holders of $1,758 million, a decrease of $60 million or 3%. Lower revenue in fixed income, equities, and commodities businesses, as well as higher non-interest expenses, were partly offset by significantly lower provision for credit losses and higher lending and deposit revenues.

Average assets and liabilities

Average assets decreased by $15 billion or 5% to $321 billion this year. Adjusting for the impact of foreign currency translation, assets decreased by $14 billion or 4%, mainly due to decreases in trading securities, deposits with banks and securities purchased under resale agreements.

Average liabilities decreased by $2 billion or 1% to $265 billion this year due to decline in securities sold under repurchase agreements and derivative-related liabilities, partly offset by higher deposits.

Net interest income

Net interest income increased by 9% to $1,454 million, mainly driven by higher deposit volumes and higher lending volumes in the U.S. and Canada. The net interest margin was 1.83%, an increase of eight basis points.

Non-interest income

Non-interest income of $3,074 million decreased by $214 million or 7% mainly due to lower trading revenues in fixed income and commodities, as well as lower underwriting fees. This was partly offset by stronger equity trading revenues and higher advisory fees.

Non-interest expense

Non-interest expenses increased by $73 million or 3% to $2,233 million. This was due primarily to higher regulatory and technology investments offset by lower performance-related compensation. Operating leverage was negative 5.5%.

Provision for credit losses

Provision for credit losses for 2018 is calculated in accordance with IFRS 9, while the provision for credit losses for 2017 was calculated in accordance with IAS 39.

The provision for credit losses decreased $92 million mainly due to impaired loan provision reversals in the U.S. and Europe and lower provisions required on performing loans primarily due to improvements in credit quality. The provision for credit losses ratio was negative six basis points, a decrease of 11 basis points.

Provision for income taxes

The effective tax rate was 25.0%, in line with the prior year.

Outlook

By executing its client-focused strategy, leveraging the Bank's unique footprint, and having strong alignment across its global operations, Global Banking and Markets is expected to grow in line with the Bank's overall growth profile over the medium to longer term. Global Banking and Markets expects to deliver continued strong growth in deposits, improved corporate lending and investment banking results to absorb required regulatory and technology investments.

C14 Total revenue



C15 Business banking revenue
$ millions



C16 Capital markets revenue by business line
$ millions



C17 Composition of average earning assets
$ billions



C18 Trading day losses



Other

The Other segment includes Group Treasury, smaller operating segments, business line elimination items and other corporate items which are not allocated to a business line.

Financial Performance

T22 Other financial performance

($ millions)	2018(1)	2017	2016
Net interest income(2)	**$ (483)**	$ (390)	$ (384)
Non-interest income(2)(3)	**(53)**	(344)	273
Total revenue(2)	**(536)**	(734)	(111)
Provision for (recovery of) credit losses	**–**	–	50
Non-interest expenses	**60**	319	653
Income tax expense(2)	**(449)**	(786)	(545)
Net income (loss)	**$ (147)**	$ (267)	$ (269)
Net income (loss) attributable to equity holders	**$ (147)**	$ (267)	$ (269)

(1) The amounts for year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Notes 3 and 4 in the consolidated financial statements).
(2) Includes the net residual in matched maturity transfer pricing and the elimination of the tax-exempt income gross-up reported in net interest income, non-interest income and provision for income taxes in the business segments.
(3) Includes net income from investments in associated corporations of $(177) in 2018; (2017 – $(141); 2016 – $(137)).

Net income

Net interest income, other operating income, and the provision for income taxes in each period include the elimination of tax-exempt income gross-up. This amount is included in the operating segments, which are reported on a taxable equivalent basis. The elimination was $112 million in 2018, compared to $562 million in 2017.

Net income from investments in associated corporations and the provision for income taxes in each period include the tax normalization adjustments related to the gross-up of income from associated corporations. This adjustment normalizes the effective tax rate in the divisions to better present the contribution of the associated corporations to the divisional results.

The Other segment had a net loss attributable to equity holders of $147 million in 2018 compared to $267 million in 2017. This was primarily due to the benefits remeasurement of $150 million ($203 million pre-tax).

Revenues

Revenues increased by $198 million mainly due to lower taxable equivalent basis offsets (eliminated in tax expenses), partly offset by lower net gain on investment securities.

Non-interest expenses

Non-interest expenses were $60 million, compared to $319 million in 2017. Lower expenses were mainly due to the benefits remeasurement in the current year of $203 million.

Financial Performance of Business Lines: 2017 vs. 2016

Canadian Banking

Canadian Banking's net income attributable to equity holders was $4,064 million in 2017, an increase of $328 million or 9%. The 2017 gain on sale of HollisWealth, a wealth management business, was lower than last year's gain on sale of a non-core lease financing business. Strong performance from retail and small business banking, commercial banking and wealth management, as well as the impact of the sale of real estate contributed to the growth. Return on equity was 22.8% up from 22.0% in 2016.

International Banking

Net income attributable to equity holders was $2,390 million, an increase of $311 million or 15%. The increase reflects higher net interest income and fees driven by good loan growth, lower commercial provisions for credit losses and the benefits of cost reduction initiatives. This was partly offset by higher income taxes and the negative impact of foreign currency translation. Return on equity was 14.7%, versus 12.8% in 2016.

Global Banking and Markets

Global Banking and Markets reported net income attributable to equity holders of $1,818 million in 2017, an increase of $247 million or 16% from 2016. Stronger results in the equities business, as well as lower provision for credit losses, were partly offset by higher expenses. Return on equity was 16% versus 12.6% in 2016.

Other

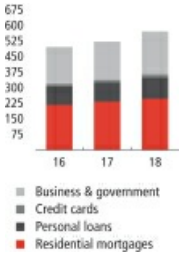
The Other segment had a net loss attributable to equity holders of $267 million in 2017. Adjusting for the restructuring charge of $378 million ($278 million after tax), net income was $9 million in 2016.

GROUP FINANCIAL CONDITION

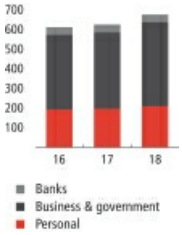
T23 Condensed statement of financial position

As at October 31 ($ billions)	2018	2017	2016
Assets			
Cash, deposits with financial institutions and precious metals	**$ 65.5**	$ 65.4	$ 54.8
Trading assets	**100.3**	98.5	108.6
Securities purchased under resale agreements and securities borrowed	**104.0**	95.3	92.1
Investment securities	**78.4**	69.3	72.9
Loans	**551.8**	504.4	480.2
Other	**98.5**	82.4	87.7
Total assets	**$ 998.5**	$915.3	$896.3
Liabilities			
Deposits	**$ 676.5**	$625.4	$611.9
Obligations related to securities sold under repurchase agreements and securities lent	**101.3**	95.8	97.1
Other liabilities	**147.3**	126.5	121.8
Subordinated debentures	**5.7**	5.9	7.6
Total liabilities	**$ 930.8**	$853.6	$838.4
Equity			
Common equity	**61.0**	55.5	52.7
Preferred shares and other equity instruments	**4.2**	4.6	3.6
Non-controlling interests in subsidiaries	**2.5**	1.6	1.6
Total equity	**$ 67.7**	$ 61.7	$ 57.9
Total liabilities and shareholders' equity	**$ 998.5**	$915.3	$896.3

C19 Loan portfolio
loans & acceptances, $ billions, as at October 31



C20 Deposits
$ billions, as at October 31



Statement of Financial Position

Assets

The Bank's total assets as at October 31, 2018 were $998 billion, up $83 billion or 9% from October 31, 2017. This growth was primarily related to the impact of acquisitions, as well as strong organic growth in loans, and increases in investment securities, trading securities, and securities purchased under resale agreements and securities borrowed.

Trading securities increased by $7 billion and securities purchased under resale agreements and securities borrowed increased by $9 billion.

Investment securities increased $9 billion from October 31, 2017 due primarily to higher holdings of U.S. government debt. As at October 31, 2018, the net unrealized loss on debt securities measured at fair value through other comprehensive income of $286 million decreased to a net unrealized loss of $204 million, after the impact of qualifying hedges.

Loans increased $47 billion from October 31, 2017. Residential mortgages increased $16 billion due to the acquisition of BBVA Chile and growth in Canada and Latin America. Personal loans and credit cards were up $9 billion due to the impact of acquisitions and growth in Canada and Latin America. Business and government loans increased $23 billion due to growth in Canada and Latin America and the acquisition of BBVA Chile.

Goodwill and other intangibles were up $6 billion, due primarily to the acquisitions.

Other assets increased $5 billion due mainly to the acquisition of MD Financial Management.

Liabilities

Total liabilities were $931 billion as at October 31, 2018, up $77 billion or 9% from October 31, 2017.

Total deposits increased $51 billion. Personal deposits grew by $15 billion due primarily to growth in Canada and Latin America and the acquisition of BBVA Chile. Business and government deposits grew by $37 billion due mainly to growth in Canada and Latin America and the acquisition of BBVA Chile.

Obligations related to securities sold under repurchase agreements and securities lent increased by $5 billion. Other liabilities increased $9 billion due mainly to the impact of acquisitions.

Equity

Total shareholders' equity increased $6,055 million from October 31, 2017. This increase was driven mainly by current year earnings of $8,724 million, the issuance of common shares of $2,708 million mainly for the acquisitions and an increase in non-controlling interests in subsidiaries of $1,091 million. Partly offsetting were dividends paid of $4,172 million, a reduction in other comprehensive income of $804 million, due mainly to a decrease in unrealized foreign currency translation gains on the Bank's investments in its foreign operations, the cumulative effect of adopting IFRS 9 of $610 million, the repurchase and cancellation of approximately 8 million common shares for $632 million, and the net redemption of preferred shares of $395 million.

Outlook

A strong global economy is expected to support assets and deposits growth across all business lines in 2019. In Canada, increased business investment should lead to expansion in commercial lending with mortgage growth being more moderate. Internationally, continued economic strength in the Pacific Alliance countries should aid in further increases in assets and personal deposits.

Capital Management

Overview

Scotiabank is committed to maintaining a strong capital base to support the risks associated with its diversified businesses. Strong capital levels contribute to financial safety for the Bank's customers, foster investor confidence and support strong credit ratings. It also allows the Bank to take advantage of growth opportunities as they arise and enhance shareholder returns through increased dividends. The Bank's capital management framework includes a comprehensive internal capital adequacy assessment process (ICAAP), aimed at ensuring that the Bank's capital is adequate to meet current and future risks and achieve its strategic objectives. Key components of the Bank's ICAAP include sound corporate governance; creating a comprehensive risk appetite for the Bank; managing and monitoring capital, both currently and prospectively; and utilizing appropriate financial metrics which relate risk to capital, including internal capital and regulatory capital measures.

Governance and oversight

The Bank has a sound capital management framework to measure, deploy and monitor its available capital and assess its adequacy. Capital is managed in accordance with the Board-approved Capital Management Policy. In addition, the Board reviews and approves the Bank's annual capital plan. The Asset-Liability Committee and senior executive management provide governance over the capital management process. The Bank's Finance, Treasury and Global Risk Management groups take a coordinated approach to implementing the Bank's capital plan.

Risk appetite

The risk appetite framework that establishes enterprise wide risk tolerances in addition to capital targets are detailed in the Risk Management section "Risk Appetite". The framework encompasses medium-term targets with respect to regulatory capital thresholds, earnings and other risk-based parameters. These targets drive behaviour to work to ensure the Bank achieves the following overall objectives: exceed regulatory and internal capital targets, manage capital levels commensurate with the risk profile of the Bank, maintain strong credit ratings and provide the Bank's shareholders with acceptable returns.

Regulatory capital

Effective November 1, 2012, Canadian banks are subject to the revised capital adequacy requirements as published by the Basel Committee on Banking Supervision (BCBS) and commonly referred to as Basel III. Basel III builds on the "International Convergence of Capital Measurement and Capital Standards: A Revised Framework" (Basel II). Under Basel III, there are three primary risk-based regulatory capital ratios used to assess capital adequacy: Common Equity Tier 1 (CET1), Tier 1 and Total capital, which are determined by dividing those capital components by risk-weighted assets. Basel III also provides guidance on non-viability contingent capital (NVCC). The guidance stipulates that in order to qualify as regulatory capital, non-common share capital instruments must be convertible into common equity upon a trigger event as defined within the guidance. All non-common share capital instruments issued after December 31, 2012, are required to meet these NVCC requirements to qualify as regulatory capital.

To enable banks to meet the new standards, the BCBS Basel III rules contain transitional arrangements commencing January 1, 2013, through January 1, 2019. Transitional requirements result in a five year phase-in of new deductions and additional components to common equity. Non-qualifying non-common capital instruments are being phased-out over 10 years and the capital conservation buffer is being phased-in over four years. As of January 2019, banks will be required to meet new minimum requirements related to risk-weighted assets of: CET1 ratio of 4.5% plus a capital conservation buffer of 2.5%, collectively 7%, minimum Tier 1 ratio of 8.5%, and Total capital ratio of 10.5%.

The Office of the Superintendent of Financial Institutions, Canada (OSFI) has issued guidelines, reporting requirements and disclosure guidance which are consistent with the Basel III reforms, except for its deferral of the Basel III credit valuation adjustment (CVA) related capital charges, requiring they be phased-in over a five year period, beginning January 2014. In accordance with OSFI's requirements, during 2018, the scalars for CVA risk-weighted assets of 0.80, 0.83 and 0.86 were used to compute the CET1, Tier 1 and Total capital ratios, respectively (October 31, 2017 – scalars of 0.72, 0.77 and 0.81, respectively). The CVA capital requirements will be fully phased in effective November 1, 2018.

Commencing the first quarter of 2013, OSFI required Canadian deposit-taking institutions to fully implement the 2019 Basel III reforms, without the transitional phase-in provisions for capital deductions (referred to as 'all-in') and achieve minimums of 7%, 8.5% and 10.5% for CET1, Tier 1 and Total Capital ratios, respectively. OSFI has also designated the Bank a domestic systemically important bank (D-SIB), increasing its minimum capital ratio requirements by 1% across all tiers of capital effective January 1, 2016, in line with the requirements for global systemically important banks. In addition, an additional Domestic Stability Buffer of 1.5% was implemented in 2018 as a Pillar 2 requirement as noted below.

In addition to risk-based capital requirements, the Basel III reforms introduced a simpler, non risk-based Leverage ratio requirement to act as a supplementary measure to its risk-based capital requirements. The Leverage ratio is defined as a ratio of Basel III Tier 1 capital to a leverage exposure measure which includes on-balance sheet assets and off-balance sheet commitments, derivatives and securities financing transactions, as defined within the requirements. In January 2014, the BCBS issued revisions to the Basel III Leverage ratio framework. In 2014, OSFI released its Basel III Leverage Ratio Requirements Guideline and Public Disclosure Requirements which outlines the application and disclosure of the Basel III Leverage ratio in Canada and the replacement of the former Assets-to-Capital Multiple (ACM), effective the first quarter of 2015. Institutions are expected to maintain a material operating buffer above the 3% minimum.

Regulatory capital developments during the year

Basel II standardized regulatory capital floor

Since the introduction of Basel II in 2008, OSFI has prescribed a minimum Basel I capital floor for institutions that use the advanced internal ratings-based approach for credit risk. The Basel I capital floor add-on is determined by comparing a capital requirement calculated by reference to Basel I against the Basel III calculation, as specified by OSFI. A shortfall in the Basel III capital requirement as compared with the Basel I floor is added to RWA.

As noted in prior quarters, OSFI replaced the Basel I regulatory capital floor with a capital floor based on the Basel II standardized approach for credit risk, effective the second quarter of 2018. Revised capital floor requirements also include risk-weighted assets for market risk and CVA. Under this new Basel II regulatory capital floor requirement, the Bank does not have a capital floor add-on as at October 31, 2018.

Domestic Stability Buffer

In June 2018, in order to provide increased transparency to the market, OSFI clarified its additional requirement for its Domestic Stability Buffer, currently held by Domestic Systemically Important Banks (D-SIBs) as a Pillar 2 buffer requirement. The Domestic Stability Buffer is not a Pillar 1 buffer. Breaches will not result in banks being subject to automatic constraints on capital distributions. If a D-SIB breaches the buffer (i.e. dips into the buffer when it has not been released), OSFI will require a remediation plan. Supervisory interventions pursuant to OSFI's Guide to Intervention would occur in cases where a remediation plan is not produced or executed in a timely manner satisfactory to OSFI.

As noted above, OSFI's minimum Pillar 1 capital ratio requirements, including the D-SIB 1% surcharge, are 8.0%, 9.5% and 11.5% for Common Equity Tier 1, Tier 1 and Total capital ratios, respectively. The Domestic Stability Buffer will range between 0 and 2.5% of a bank's total risk-weighted assets (RWA). OSFI will undertake a review of the buffer on a semi-annual basis, in June and December, and any changes to the buffer will be made public, along with supporting rationale. In exceptional circumstances, OSFI may make and announce adjustments to the buffer in-between scheduled review dates. The next review will occur in December 2018. OSFI's Domestic Stability Buffer is presently set at 1.5% of total risk-weighted assets.

Total Loss Absorbing Capacity (TLAC)

In April 2018, OSFI issued its guideline on Total Loss Absorbing Capacity (TLAC), which will apply to Canada's D-SIBs as part of the Federal Government's bail-in regime. The standards are intended to address the sufficiency of a systemically important bank's loss absorbing capacity to support its recapitalization in the event of its failure. Effective November 1, 2021, D-SIBs will be required to maintain a minimum risk-based TLAC ratio and a minimum TLAC leverage ratio. TLAC is defined as the aggregate of Tier 1 capital, Tier 2 capital, and other TLAC instruments that are subject to conversion in whole or in part into common shares under the CDIC Act and meet all of the eligibility criteria under the guidelines. The Bank's minimum TLAC ratio requirements consist of 21.5% of risk-weighted assets (plus Domestic Stability Buffer requirement) and 6.75% of leverage ratio exposures. OSFI may subsequently vary the minimum TLAC requirements for individual D-SIBs or groups of D-SIBs. Where a D-SIB falls below the minimum TLAC requirements, OSFI may take any measures deemed appropriate, including measures set out in the Bank Act. The Bank does not anticipate any challenges in meeting its TLAC requirements.

OSFI also revised its Capital Adequacy Requirements (CAR) guideline to implement the amendments to Basel III finalized by the BCBS in October 2016 in respect of holdings of Other TLAC instruments issued by global systemically important banks (G-SIBs) that qualify towards their TLAC requirements and instruments ranking pari passu with those instruments. The BCBS regulatory capital treatment in respect of holdings of Other TLAC aims to reduce a significant source of contagion in the banking system. OSFI has determined that it is appropriate to extend the Basel III treatment to holdings of Other TLAC instruments issued by Canadian D-SIBs. The regulatory adjustments relating to holdings of Other TLAC instruments apply from November 1, 2018.

Planning, managing and monitoring capital

Capital is managed and monitored based on planned changes in the Bank's strategy, identified changes in its operating environment or changes in its risk profile. As part of the Bank's comprehensive ICAAP, sources and uses of capital are continuously measured and monitored through financial metrics, including regulatory thresholds, and internal capital. These results are used in capital planning and strategic decision-making.

The Bank's assessment of capital adequacy is in the context of its current position and its expected future risk profile and position relative to its internal targets while considering the potential impact of various stress scenarios. Specific scenarios are selected based on the current economic conditions and business events facing the Bank. In addition, the Bank's forward looking capital adequacy assessment includes a consideration of the results of more severe multi-risk scenarios within its enterprise-wide stress testing. This testing is used to determine the extent to which severe, but plausible events, impact the Bank's capital.

The Bank sets internal regulatory capital targets to ensure the Bank's available capital is sufficient within the context of its risk appetite.

The Bank's internal target includes an adequate buffer over the regulatory minimum ensuring sufficient flexibility for future capital deployment and in consideration of the Bank's risk appetite, the volatility of planning assumptions, the results from stress testing and contingency planning.

The Bank has a comprehensive risk management framework to ensure that the risks taken while conducting its business activities are consistent with its risk appetite, its impact on capital relative to internal targets, and that there is an appropriate balance between risk and return. Refer to the Risk Management section for further discussion on the Bank's risk management framework. In managing the Bank's capital base, close attention is paid to the cost and availability of the various types of capital, desired leverage, changes in the assets and risk-weighted assets, and the opportunities to profitably deploy capital. The amount of capital required for the business risks being assumed, and to meet regulatory requirements, is balanced against the goal of generating an appropriate return for the Bank's shareholders.

Capital generation

Capital is generated internally through net earnings after dividend payments. As well, capital is generated by the issuance of common shares, preferred shares and other equity instruments, and subordinated debentures, net of redemptions.

Capital deployment

The Bank deploys capital to support sustainable, long-term revenue and net income growth. The growth can be through existing businesses by attracting new customers, increasing cross-selling activities to existing customers, adding new products and enhancing sales productivity, or through acquisitions. All major initiatives to deploy capital are subject to rigorous analysis, validation of business case assumptions and evaluation of expected benefits. Key financial criteria include impact on earnings per share, capital ratios, return on invested capital, expected payback period and internal rate of return based on discounted cash flows.

Regulatory capital ratios

The Bank continues to maintain strong, high quality capital levels which position it well for future business growth. The Basel III Common Equity Tier 1 (CET1) ratio as at October 31, 2018 was 11.1%. The CET1 ratio reduced by approximately 40 basis points in 2018 due primarily to the impact of acquisitions that closed during the year, share buybacks and the Bank's adoption of IFRS 9, partly offset by strong internal capital generation and the benefit from moving to the Basel II regulatory capital floor.

The Bank's Basel III Tier 1 and Total capital ratios were 12.5% and 14.3%, respectively, as at October 31, 2018, down from 2017 due primarily to the same factors described above impacting the CET1 ratio. In addition, the Leverage ratio declined by approximately 20 basis points in 2018 due primarily to the Bank's acquisitions and organic asset growth.

The Bank's capital ratios continue to be well in excess of OSFI's minimum capital ratio requirements for 2018 (including the 1% D-SIB surcharge and Domestic Stability Buffer requirements) of 9.5%, 11.0% and 13.0% for CET1, Tier 1 and Total Capital, respectively. The Bank was well above the OSFI prescribed minimum Leverage ratio as at October 31, 2018.

Outlook

Looking to 2019, the Bank's capital position is forecast to improve from strong internal capital generation and divestitures of certain non-core businesses, in support of the Bank's growth initiatives that enhance shareholder returns.

T24 Regulatory capital(1)

	Basel III All-in		
As at October 31 ($ millions)	**2018**	2017	2016
Common Equity Tier 1 capital			
Total Common Equity	**$ 60,727**	$ 55,454	$ 52,657
Qualifying non-controlling interest in common equity of subsidiaries	**1,628**	636	597
Goodwill and non-qualifying intangibles, net of deferred tax liabilities (2)	**(16,428)**	(11,505)	(11,589)
Threshold related deductions	**(863)**	(271)	(435)
Net deferred tax assets (excluding those arising from temporary differences)	**(335)**	(417)	(484)
Other Common Equity Tier 1 capital deductions (3)	**(286)**	(545)	(757)
Common Equity Tier 1	**44,443**	43,352	39,989
Preferred shares(4)	**2,624**	3,019	3,594
Subordinated additional Tier 1 capital securities (NVCC)	**1,560**	1,560	–
Capital instrument liabilities – trust securities (4)	**1,400**	1,400	1,400
Other Tier 1 capital adjustments (5)	**160**	142	83
Net Tier 1 capital	**50,187**	49,473	45,066
Tier 2 capital			
Subordinated debentures, net of amortization (4)	**5,698**	5,935	7,633
Allowance for credit losses eligible for inclusion in Tier 2 and excess allowance (re: IRB approach) (6)	**1,380**	602	528
Qualifying non-controlling interest in Tier 2 capital of subsidiaries	**99**	103	103
Other Tier 2 capital adjustments	**–**	–	–
Tier 2 capital	**7,177**	6,640	8,264
Total regulatory capital	**57,364**	56,113	53,330
Risk-weighted assets ($ billions)			
Credit risk	**347.1**	315.2	314.8
Market risk	**8.4**	7.8	10.6
Operational risk	**45.0**	40.6	38.6
Basel capital floor adjustments(7)	**–**	12.8	–
CET1 risk-weighted assets (7)(8)	**$ 400.5**	$ 376.4	$ 364.0
Capital ratios(9)			
Common Equity Tier 1	**11.1%**	11.5%	11.0%
Tier 1	**12.5%**	13.1%	12.4%
Total	**14.3%**	14.9%	14.6%
Leverage:			
Leverage exposures	**$ 1,119,099**	$ 1,052,891	$ 1,010,987
Leverage ratio	**4.5%**	4.7%	4.5%

(1) Regulatory capital ratios are determined in accordance with Basel III rules on an all-in basis.
(2) Reported amounts are based on OSFI's requirements that goodwill relating to investments in associates be classified as goodwill for regulatory reporting purposes.
(3) Other CET1 capital deductions under Basel III all-in include gains/losses due to changes in own credit risk on fair valued liabilities, pension plan assets and other items.
(4) Non-qualifying Tier 1 and Tier 2 capital instruments are subject to a phase-out period of 10 years.
(5) Other Tier 1 capital adjustments under the all-in approach include eligible non-controlling interests in subsidiaries.
(6) Collective allowances for 2017 and 2016.
(7) Since the introduction of Basel II in 2008, OSFI has prescribed a minimum capital floor for institutions that use the advanced internal ratings-based approach for credit risk. The Basel I capital floor add-on is determined by comparing a capital requirement calculated by reference to Basel I against the Basel III calculation, as specified by OSFI. A shortfall in the Basel III capital requirement as compared with the Basel I floor is added to RWA. OSFI replaced the Basel I regulatory capital floor with a capital floor based on the Basel II standardized approach for credit risk, effective April 30, 2018. Revised capital floor requirements also include risk-weighted assets for market risk and CVA. Under this new Basel II regulatory capital floor requirement, the Bank does not have a capital floor add-on as at October 31, 2018 (Basel I floor add-on: October 31, 2017 - $12.8 billion, October 31, 2016 - nil).
(8) As at October 31, 2018, CVA risk-weighted assets were calculated using scalars of 0.80, 0.83, and 0.86 to compute CET1, Tier 1 and Total capital ratios, respectively, (scalars of 0.72, 0.77, and 0.81 in 2017).
(9) OSFI designated the Bank as a domestic systemically important bank (D-SIB), increasing its minimum capital ratio requirements by 1% for the identified D-SIBs. This 1% surcharge was applicable to all minimum capital ratio requirements for CET1, Tier 1 and Total Capital, by January 1, 2016, in line with the requirements for global systemically important banks.

T25 Changes in regulatory capital (1)

For the fiscal years ($ millions)	Basel III All-in 2018	2017	2016
Total capital, beginning of year	**$ 56,113**	$ 53,330	$ 48,230
Changes in Common Equity Tier 1			
Net income attributable to common equity holders of the Bank	**8,361**	7,876	6,987
Dividends paid to equity holders of the bank	**(3,985)**	(3,668)	(3,468)
Shares issued	**2,708**	313	391
Shares repurchased/redeemed	**(632)**	(1,009)	(80)
Gains/losses due to changes in own credit risk on fair valued liabilities	**(25)**	185	(2)
Movements in accumulated other comprehensive income, excluding cash flow hedges	**(228)**	(634)	(472)
Change in non-controlling interest in common equity of subsidiaries	**992**	39	40
Change in goodwill and other intangible assets (net of related tax liability) (2)	**(4,923)**	84	(571)
Other changes including regulatory adjustments below:	**(1,177)**	177	199
– Deferred tax assets that rely on future profitability (excluding those arising from temporary differences)	**82**	67	55
– IFRS 9 impact(3)	**(564)**	–	–
– Significant investments in the common equity of other financial institutions (amount above 10% threshold)	**(306)**	129	61
– Other capital deductions	**(359)**	35	126
– Other	**(30)**	(54)	(43)
Changes in Common Equity Tier 1	**$ 1,091**	$ 3,363	$ 3,024
Changes in Additional Tier 1 Capital			
Issued	**300**	1,560	1,350
Redeemed	**(695)**	(575)	(690)
Other changes including regulatory adjustments and phase-out of non-qualifying instruments	**18**	59	16
Changes in Additional Tier 1 Capital	**$ (377)**	$ 1,044	$ 676
Changes in Tier 2 Capital			
Issued	**–**	–	2,502
Redeemed	**(232)**	(1,500)	(1,035)
Allowance for credit losses eligible for inclusion in Tier 2 and Excess Allowance under AIRB (4)	**778**	74	42
Other changes including regulatory adjustments and phase-out of non-qualifying instruments	**(9)**	(198)	(109)
Changes in Tier 2 Capital	**$ 537**	$ (1,624)	$ 1,400
Total capital generated (used)	**$ 1,251**	$ 2,783	$ 5,100
Total capital, end of year	**$ 57,364**	$ 56,113	$ 53,330

(1) Regulatory capital ratios are determined in accordance with Basel III rules on an all-in basis.
(2) Reported amounts are based on OSFI's requirements that goodwill relating to investments in associates be classified as goodwill for regulatory reporting purposes.
(3) Represents the full transitional impact on retained earnings from the Bank's adoption of IFRS 9 (Financial Instruments) on November 1, 2017.
(4) Collective allowances for 2017 and 2016.

Regulatory capital components

The Bank's regulatory capital is divided into three components – Common Equity Tier 1 (CET1), Tier 1 capital and Tier 2 capital, depending on their degree of permanency and loss absorbency. All components of capital provide support for banking operations and protect depositors.

CET1 consists primarily of common shareholders' equity, a proration of non-controlling interests, and regulatory deductions. These regulatory deductions include goodwill, intangible assets (net of deferred tax liabilities), deferred tax assets that rely on future profitability, defined-benefit pension fund net assets, shortfall of allowance for credit losses to expected losses and significant investments in the common equity of other financial institutions.

Additional Tier 1 capital consists primarily of qualifying non-cumulative preferred shares, qualifying other equity instruments (as described in Note 24), and non-qualifying preferred shares and innovative Tier 1 instruments subject to phase-out. Tier 2 capital consists mainly of qualifying or non-qualifying subordinated debentures subject to phase-out and the eligible allowances for credit losses.

The Bank's CET1 capital was $44.4 billion as at October 31, 2018, an increase of $1.1 billion from the prior year primarily due to:

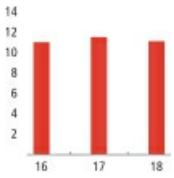
- $4.4 billion growth from internal capital generation;
- $2.7 billion from common share issuances in connection with the acquisition of Jarislowsky Fraser and MD Financial Management; and,
- $1.0 billion from higher regulatory capital arising from non-controlling interests, mainly the acquisition of BBVA Chile.

Partly offset by:

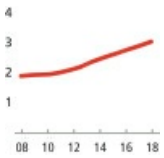
- $4.9 billion from higher regulatory capital deductions for goodwill and intangibles, primarily from the acquisitions which closed during the year;
- $0.6 billion from changes in other regulatory capital deductions;
- $0.6 billion decrease from the adoption of IFRS 9;
- $0.6 billion from common share buybacks net of common shares issuances under the Bank's employee share purchase and stock option plans; and,
- $0.2 billion decrease from movements in Accumulated Other Comprehensive Income, excluding cash flow hedges, primarily from the impact of foreign currency translation, partly offset by gains from employee pensions and benefits plans.

The Bank's Tier 1 and Total capital were also impacted by the above changes and the planned redemptions of non-NVCC preferred shares for $695 million, partly offset by the $300 million issuance of NVCC preferred shares. The Total capital ratio also benefited from increases in allowance for credit losses, primarily from adoption of IFRS 9.

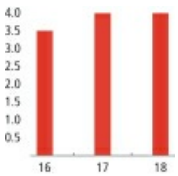
C21 CET1 capital
%, as at October 31



C22 Dividend growth
dollars per share



C23 Internally generated capital
$ billions, for years ended October 31



Dividends

The strong earnings and capital position allowed the Bank to increase its dividends twice in 2018. The annual dividend in 2018 was $3.28, compared to $3.05 in 2017, an increase of 8%. The dividend payout ratio was 47.7% in line with the Bank's Board approved target dividend payout ratio of 40-50%.

T26 Selected capital management activity

For the fiscal years ($ millions)	2018	2017	2016
Dividends			
Common	**$ 3,985**	$ 3,668	$ 3,468
Preferred and other equity instruments	**187**	129	130
Common shares issued(1)	**2,708**	313	391
Common shares repurchased for cancellation under the Normal Course Issuer Bid (2)	**632**	1,009	80
Preferred shares and other equity instruments issued	**300**	1,560	1,350
Preferred shares and other equity instruments redeemed	**695**	575	690
Subordinated debentures issued	**–**	–	2,502
Maturity, redemption and repurchase of subordinated debentures	**232**	1,500	1,035

(1) Represents primarily cash received for stock options exercised during the year, common shares issued in connection with acquisitions, and common shares issued pursuant to the Dividend and Share Purchase Plan.
(2) Represents reduction to Common shares and Retained earnings (refer to the Consolidated Statement of Changes in Equity).

Common shares issued

On May 1, 2018, the Bank issued 11,133,141 common shares at a price of $78.86 per common share in connection with the acquisition of Jarislowsky Fraser. As a result of the issuance, the Bank recorded an increase to equity – common shares of $878 million. Refer to Note 24 in the consolidated financial statements for additional details.

On June 8, 2018, the Bank completed its public offering of 22,655,000 common shares, at a price of $76.15 per common share. As a result of the public offering, the Bank recorded an increase to equity – common shares of $1,696 million, net of transaction costs of $29 million. The Bank used the proceeds from the public offering to partially fund the acquisition of MD Financial Management.

Normal Course Issuer Bid

On May 29, 2018, the Bank announced that OSFI and the Toronto Stock Exchange (TSX) approved a normal course issuer bid (the "2018 NCIB") pursuant to which it may repurchase for cancellation up to 24 million of the Bank's common shares. Purchases under the 2018 NCIB will terminate upon earlier of: (i) the Bank purchasing the maximum number of common shares under the 2018 NCIB, (ii) the Bank providing a notice of termination, or (iii) June 3, 2019. On a quarterly basis, the Bank will notify OSFI prior to making purchases. Under the 2018 NCIB, the Bank has cumulatively repurchased and cancelled approximately 5.98 million common shares at an average price of $75.85 per share.

On May 30, 2017, the Bank announced that OSFI and TSX approved a normal course issuer bid (the "2017 NCIB") pursuant to which it may repurchase for cancellation up to 24 million of the Bank's common shares. The 2017 NCIB terminated on June 1, 2018. Under the 2017 NCIB, the Bank cumulatively repurchased and cancelled approximately 6.25 million common shares at an average price of $76.41 per share.

During the year ended October 31, 2018, the Bank repurchased and cancelled approximately 8.23 million common shares (2017 – approximately 14 million) at a volume weighted average price of $76.77 per share (2017 – $72.09) for a total amount of $632 million (2017 – $1,009 million). Approximately 2 million of the common shares purchased were pursuant to a private agreement with an arm's length third party seller and at a discount to the prevailing market price of the Bank's common shares on the TSX at the time of the purchases.

Share data and other capital instruments

The Bank's common and preferred share data, as well as other capital instruments, are shown in T27. Further details, including exchangeability features, are discussed in Note 21 and Note 24 of the consolidated financial statements.

T27 Shares and other instruments

As at October 31, 2018	Amount ($ millions)	Dividends declared per share(1)	Number outstanding (000s)	Conversion features
Common shares(2)	$ 18,234	$ 3.28	1,227,028	n/a
Preferred shares				
Preferred shares Series 18(3)	–	0.418750	–	–
Preferred shares Series 19(3)	–	0.374547	–	–
Preferred shares Series 20(4)	–	0.902500	–	–
Preferred shares Series 21(4)	–	0.691967	–	–
Preferred shares Series 22(5)(6)	234	0.957500	9,377	Series 23
Preferred shares Series 23(5)(7)	66	0.736967	2,623	Series 22
Preferred shares Series 30(5)(8)	154	0.455000	6,143	Series 31
Preferred shares Series 31(5)(9)	111	0.516968	4,457	Series 30
Preferred shares Series 32(5)(10)	279	0.515752	11,162	Series 33
Preferred shares Series 33(5)(11)	130	0.601968	5,184	Series 32
Preferred shares Series 34(5)(12)(13)	350	1.375000	14,000	Series 35
Preferred shares Series 36(5)(12)(14)	500	1.375000	20,000	Series 37
Preferred shares Series 38(5)(12)(15)	500	1.212500	20,000	Series 39
Preferred shares Series 40(5)(12)(16)	300	–	12,000	Series 41

Additional Tier 1 securities	Amount ($ millions)	Distribution(17)	Yield (%)	Number outstanding (000s)
Scotiabank Trust Securities – Series 2006-1 issued by Scotiabank Capital Trust (18a,c,d)	$ 750	28.25	5.650	750
Scotiabank Tier 1 Securities – Series 2009-1 issued by Scotiabank Tier 1 Trust (18b,c,d)	650	39.01	7.802	650
Subordinated additional Tier 1 capital securities (NVCC)	US$ 1,250	US$ 23.25	4.650	1,250

NVCC subordinated debentures	Amount ($ millions)	Interest Rate (%)
Subordinated debentures due March 2027	$ 1,250	2.58
Subordinated debentures due December 2025	750	3.37
Subordinated debentures due December 2025	US$ 1,250	4.50

Options	Number outstanding (000s)
Outstanding options granted under the Stock Option Plans to purchase common shares (2)(19)	14,140

(1) Dividends declared as at August 28, 2018.
(2) Dividends on common shares are paid quarterly, if and when declared. As at November 16, 2018, the number of outstanding common shares and options was 1,227,059 thousand and 14,108 thousand, respectively.
(3) On April 26, 2018, the Bank redeemed all outstanding Non-cumulative Preferred shares Series 18 and Series 19 and paid a dividend of $0.209375 and $0.181788, respectively, per share.
(4) On October 26, 2018, the Bank redeemed all outstanding Non-cumulative Preferred shares Series 20 and Series 21 and paid a dividend of $0.225625 and $0.187403, respectively, per share.
(5) These shares are entitled to non-cumulative preferential cash dividends payable quarterly. These preferred shares have conversion features. Refer to Note 24 of the consolidated financial statements in the Bank's 2018 Annual Report for further details.
(6) Subsequent to the initial five-year fixed rate period which ended on January 25, 2014, and resetting every five years thereafter, the dividends, if and when declared, will be determined by the sum of the five-year Government of Canada Yield plus 1.88%, multiplied by $25.00.
(7) Dividends, if and when declared, are determined by the sum of the three-month Government of Canada Treasury Bill Yield plus 1.88%, multiplied by $25.00, which will be reset quarterly.
(8) Subsequent to the initial five-year fixed rate period which ended on April 25, 2015, and resetting every five years thereafter, the dividends, if and when declared, will be determined by the sum of the five-year Government of Canada Yield plus 1.00%, multiplied by $25.00.
(9) Dividends, if and when declared, are determined by the sum of the three-month Government of Canada Treasury Bill Yield plus 1.00%, multiplied by $25.00, which will be reset quarterly.
(10) Subsequent to the initial five-year fixed rate period which ended on February 1, 2016, and resetting every five years thereafter, the dividends, if and when declared, will be determined by the sum of the five-year Government of Canada Yield plus 1.34%, multiplied by $25.00.
(11) Dividends, if and when declared, are determined by the sum of the three-month Government of Canada Treasury Bill Yield plus 1.34%, multiplied by $25.00, which will be reset quarterly.
(12) These preferred shares contain Non-Viability Contingent Capital (NVCC) provisions necessary for the shares to qualify as Tier 1 regulatory capital under Basel III. Refer to Note 24 of the consolidated financial statements in the Bank's 2018 Annual Report for further details.
(13) Subsequent to the initial five-year fixed rate period ending on April 25, 2021, and resetting every five years thereafter, the dividends, if and when declared, will be determined by the sum of the five-year Government of Canada Yield plus 4.51%, multiplied by $25.00.
(14) Subsequent to the initial five-year fixed rate period ending on July 25, 2021, and resetting every five years thereafter, the dividends, if and when declared, will be determined by the sum of the five-year Government of Canada Yield plus 4.72%, multiplied by $25.00.
(15) Subsequent to the initial five-year fixed rate period ending on January 26, 2022, and resetting every five years thereafter, the dividends, if and when declared, will be determined by the sum of the five-year Government of Canada Yield plus 4.19%, multiplied by $25.00.
(16) On October 12, 2018, the Bank issued 12 million Non-cumulative 5-Year Rate Reset Preferred Shares Series 40 (NVCC) for $300 million. The initial dividend, if declared, will be payable on January 29, 2019. Subsequent to the initial five-year fixed rate period ending on January 26, 2024, and resetting every five years thereafter, the dividends, if and when declared, will be determined by the sum of the five-year Government of Canada yield plus 2.43%, multiplied by $25.00
(17) Per face amount of $1,000 or US$1,000, as applicable.
(18)(a) On September 28, 2006, Scotiabank Capital Trust issued 750,000 Scotiabank Trust Securities – Series 2006-1 (Scotia BaTS II Series 2006-1). The holders of Scotia BaTS II Series 2006-1 are entitled to receive non-cumulative fixed cash distributions payable semi-annually in an amount of $28.25 per security. With regulatory approval, these securities may be redeemed in whole upon the occurrence of certain tax or regulatory capital changes, or in whole or in part on December 30, 2011 and on any distribution date thereafter at the option of Scotiabank Capital Trust. The holder has the right at any time to exchange their security into Non-cumulative Preferred Shares Series S of the Bank. The Series S shares will be entitled to cash dividends payable semi-annually in an amount of $0.4875 per $25.00 share [refer to Note 24 – Restrictions on dividend payments in the Bank's 2018 Annual Report]. Under the circumstances outlined in 18(c) below, the Scotia BaTS II Series 2006-1 would be automatically exchanged without the consent of the holder, into Non-cumulative Preferred Shares Series T of the Bank. The Series T shares will be entitled to non-cumulative cash dividends payable semi-annually in an amount of $0.625 per $25.00 share. If there is an automatic exchange of the Scotia BaTS II Series 2006-1 into Preferred Shares Series T of the Bank, then the Bank would become the sole beneficiary of the Trust.
(18)(b) On May 7, 2009, Scotiabank Tier 1 Trust issued 650,000 Scotiabank Tier 1 Securities Series 2009-1 (Scotia BaTS III Series 2009-1). Interest is payable semi-annually in an amount of $39.01 per Scotia BaTS III Series 2009-1 on the last day of June and December until June 30, 2019. After June 30, 2019 and on every fifth anniversary thereafter until June 30, 2104, the interest rate on the Scotia BaTS III Series 2009-1 will be reset at an interest rate per annum equal to the then prevailing 5-year Government of Canada Yield plus 7.05%. On or after June 30, 2014, the Trust may, at its option redeem the Scotia BaTS III Series 2009-1, in whole or in part, subject to regulatory approval. Under the circumstances outlined in 18(c) below, the Scotia BaTS III Series 2009-1, including accrued and unpaid interest thereon, would be exchanged automatically without the consent of the holder, into newly issued Non-cumulative Preferred Shares Series R of the Bank. In addition, in certain circumstances, holders of Scotia BaTS III Series 2009-1 may be required to invest interest paid on the Scotia BaTS III Series 2009-1 in a series of newly-issued preferred shares of the Bank with non-cumulative dividends (each such series is referred to as Bank Deferral Preferred Shares). If there is an automatic exchange of the Scotia BaTS III Series 2009-1 into Preferred Shares Series R of the Bank, then the Bank would become the sole beneficiary of the Trust.
(18)(c) The Scotia BaTS II Series 2006-1 and Scotia BaTS III Series 2009-1 may be automatically exchanged, without the consent of the holder, into Non-cumulative Preferred Shares of the Bank in the following circumstances: (i) proceedings are commenced for the winding-up of the Bank; (ii) the Superintendent takes control of the Bank or its assets; (iii) the Bank has a Tier 1 Capital ratio of less than 5% or a Total Capital ratio of less than 8%; or (iv) the Superintendent has directed the Bank to increase its capital or provide additional liquidity and the Bank elects such automatic exchange or the Bank fails to comply with such direction.
(18)(d) No cash distributions will be payable on the Scotia BaTS II Series 2006-1 and Scotia BaTS III Series 2009-1 in the event that the regular dividend is not declared on the Bank's preferred shares and, if no preferred shares are outstanding, the Bank's common shares. In such a circumstance the net distributable funds of the Trust will be payable to the Bank as the holder of the residual interest in the Trust. Should the Trust fail to pay the semi-annual distributions on the Scotia BaTS II Series 2006-1 and Scotia BaTS III Series 2009-1 in full, the Bank will not declare dividends, of any kind on any of its preferred or common shares for a specified period of time [refer to Note 24 – Restrictions on dividend payments].
(19) Included are 3,900 stock options with tandem stock appreciation rights (Tandem SAR) features.

Credit ratings

Credit ratings are one of the factors that impact the Bank's access to capital markets and the terms on which it can conduct derivatives, hedging transactions and borrow funds. The credit ratings and outlook that the rating agencies assign to the Bank are based on their own views and methodologies.

The Bank continues to have strong credit ratings[1] and its deposits and legacy senior debt are rated AA by DBRS, Aa2 by Moody's, AA- by Fitch and A+ by Standard and Poor's (S&P). All four credit rating agencies have a stable outlook on the Bank.

The rating agencies took various actions around the finalization and implementation of Canada's bail-in regime in 2018. On April 19, 2018, DBRS changed the Bank's trend to Stable from Negative (on the Long Term Issuer Ratings, Senior Debt Ratings, and Deposits Ratings) and assigned AA (low) provisional rating to the new Bail-inable Senior Debt to be issued after September 23, 2018, following the finalization of Canada's impending bail-in regime. On July 16, 2018, Moody's upgraded the Bank's long-term ratings by two-notches to Aa2 from A1 and changed the trend to Stable from Negative (on the Bank's Long-Term Issuer Ratings, Senior Debt Ratings and Deposit Ratings), following the finalization of Canada's impending bail-in regime. On September 24, 2018, Moody's aligned the Bank's Issuer Rating with the A2 provisional rating of bail-inable debt to be issued after September 23, 2018. Canadian banking peers' ratings were aligned in a similar manner. The Bank's Legacy Senior Debt Rating and Deposit Rating both remain unchanged at Aa2.

Risk-weighted assets

Regulatory capital requirements are based on OSFI's target minimum percentage of risk-weighted assets (RWA). RWA represent the Bank's exposure to credit, market and operational risk and are computed by applying a combination of the OSFI approved Bank's internal risk models and OSFI prescribed risk weights to on- and off-balance sheet exposures. CET1, Tier 1 and Total Capital RWA were $400.5 billion, $400.7 billion and $400.9 billion, respectively at year end, representing increases from 2017 of approximately $24.1 billion, $24.3 billion and $24.5 billion, respectively.

Increases to CET1, Tier 1 and Total Capital RWA during the year are primarily due to organic growth and the Bank's acquisitions which closed during the year, partly offset by the elimination of the RWA add-on from the Basel I capital floor and the impacts from foreign currency translation.

CET1 Credit risk-weighted assets

As shown in Table T28, CET1 credit risk-weighted assets increased by approximately $31.9 billion to $347.1 billion due primarily to the following components:

- Higher volumes increased RWA by $13.4 billion;
- Book quality changes, including parameter recalibrations, decreased RWA by $0.5 billion;
- Model updates decreased RWA by $1.0 billion;
- Acquisitions increased RWA by $21.2 billion; and,
- The impact of foreign exchange translation decreased RWA by $1.2 billion.

T28 Flow statement for Basel III All-in credit risk-weighted assets ($ millions)

	2018		2017	
Credit risk-weighted assets movement by key driver (1) ($ millions)	**Credit risk**	**Of which counterparty credit risk**	**Credit risk**	**Of which counterparty credit risk**
CET1 Credit risk-weighted assets as at beginning of year	**$ 315,159**	**$ 16,494**	$ 314,822	$ 16,432
Book size (2)	**13,351**	**(2,525)**	14,219	797
Book quality (3)	**(488)**	**(109)**	(5,812)	(1,209)
Model updates (4)	**(1,037)**	**–**	(2,248)	219
Methodology and policy (5)	**332**	**332**	1,062	521
Acquisitions and disposals	**21,195**	**2,998**	–	–
Foreign exchange movements	**(1,249)**	**353**	(6,884)	(266)
Other	**(167)**	**–**	–	–
CET1 Credit risk-weighted assets as at end of year (6)	**$ 347,096**	**$ 17,543**	**$ 315,159**	**$ 16,494**
Tier 1 CVA scalar	**173**	**173**	208	208
Tier 1 Credit risk-weighted assets as at end of year (6)	**347,269**	**17,716**	315,367	16,702
Total CVA scalar	**173**	**173**	166	166
Total Credit risk-weighted assets as at end of year (6)	**$ 347,442**	**$ 17,889**	**$ 315,533**	**$ 16,868**

(1) Includes counterparty credit risk.
(2) Book size is defined as organic changes in book size and composition (including new business and maturing loans).
(3) Book quality is defined as quality of book changes caused by experience such as underlying customer behaviour or demographics, including changes through model calibrations/realignments.
(4) Model updates are defined as model implementation, change in model scope or any change to address model enhancement.
(5) Methodology and policy is defined as methodology changes to the calculations driven by regulatory policy changes, such as new regulation (e.g. Basel III).
(6) As at October 31, 2018, risk-weighted assets were calculated using scalars of 0.80, 0.83, and 0.86 to compute CET1, Tier 1, and Total capital ratios, respectively, (scalars were 0.72, 0.77, and 0.81 in 2017).

(1) Refers to the long term deposit rating and legacy senior debt rating. Senior debt post September 23, 2018 issued under the "bail-in" regime will be notched down by Moody's(A2), S&P(A-) and DBRS(AA(low)) relative to the legacy senior debt. The Bank has not issued such bail-inable senior debt as of November 26, 2018.

T29 Internal rating scale(1) and mapping to external rating agencies

Equivalent Rating External Rating – S&P	External Rating – Moody's	External Rating – DBRS	Grade	IG Code	PD Range(2)
AAA to AA+	Aaa to Aa1	AAA to AA (high)		99-98	0.0000% – 0.0448%
AA to A+	Aa2 to A1	AA to A (high)	Investment	95	0.0448% – 0.1304%
A to A-	A2 to A3	A to A (low)	grade	90	0.0552% – 0.1402%
BBB+	Baa1	BBB (high)		87	0.0876% – 0.2187%
BBB	Baa2	BBB		85	0.1251% – 0.3176%
BBB-	Baa3	BBB (low)		83	0.1788% – 0.4610%
BB+	Ba1	BB (high)		80	0.2886% – 0.5134%
BB	Ba2	BB	Non-Investment	77	0.4658% – 0.5716%
BB-	Ba3	BB (low)	grade	75	0.5716% – 0.7518%
B+	B1	B (high)		73	0.7518% – 1.4444%
B to B-	B2 to B3	B to B (low)		70	1.4444% – 2.7749%
CCC+	Caa1	–		65	2.7749% – 10.1814%
CCC	Caa2	–	Watch list	60	10.1814% – 19.4452%
CCC- to CC	Caa3 to Ca	–		40	19.4452% – 35.4088%
–	–	–		30	35.4088% – 59.5053%
Default			Default	21	100%

(1) Applies to non-retail portfolio.
(2) PD ranges overlap across IG codes as the Bank utilizes two risk rating systems for its AIRB portfolios, and each risk rating system has its own separate IG to PD mapping.

T30 Non-retail AIRB portfolio exposure by internal rating grade (1)

As at October 31 ($ millions)		2018					2017				
Grade	IG Code	Exposure at default ($)(3)	RWA ($)(4)	PD (%)(5)(8)	LGD (%)(6)(8)	RW (%)(7)(8)	Exposure at default ($)(3)	RWA ($)(4)	PD (%)(5)(8)	LGD (%)(6)(8)	RW (%)(7)(8)
Investment grade(2)	99-98	86,767	869	0.01	12	1	79,908	930	0.01	11	1
	95	57,856	6,121	0.05	32	11	46,871	5,816	0.05	33	12
	90	60,751	8,834	0.07	34	15	56,472	9,190	0.07	35	16
	87	47,545	11,711	0.10	40	25	44,533	10,229	0.11	38	23
	85	44,191	15,716	0.16	44	36	40,379	13,229	0.16	43	33
	83	42,802	18,982	0.24	44	44	41,488	17,796	0.25	44	43
Non-Investment grade	80	39,614	22,490	0.36	46	57	36,235	18,701	0.35	44	52
	77	26,883	15,253	0.49	42	57	23,045	13,167	0.50	42	57
	75	19,138	13,455	0.75	42	70	20,085	13,703	0.75	43	68
	73	7,520	5,623	1.44	35	75	7,271	5,608	1.44	35	77
	70	2,817	2,190	2.78	31	78	3,758	3,666	2.77	37	98
Watch list	65	1,143	1,888	10.18	41	165	2,167	2,136	10.18	25	99
	60	1,104	1,517	19.48	28	137	761	1,454	19.45	38	191
	40	576	1,164	30.84	38	202	1,311	2,647	30.74	38	202
	30	141	236	59.16	42	167	159	220	58.44	36	138
Default(9)	21	1,178	3,043	100	42	258	1,752	6,298	100	44	359
Total		440,026	129,092	0.61	34	29	406,195	124,790	0.86	34	31
Government guaranteed residential mortgages		82,192	–	–	23	–	91,737	–	–	35	–
Total		522,218	129,092	0.51	32	25	497,932	124,790	0.70	34	25

(1) Excludessecuritization exposures.
(2) Excludesgovernment guaranteed residential mortgages of $82.2 billion ($91.7 billion in 2017).
(3) Aftercredit risk mitigation.
(4) RWAprior to 6% scaling factor.
(5) PD– Probability of Default.
(6) LGD– Loss Given Default.
(7) RW– Risk Weight.
(8) Exposureat default used as basis for estimated weightings.
(9) Grossdefaulted exposures, before any related allowances.

Credit risk-weighted assets – non-retail

Credit risk measures the risk that a borrower or counterparty will fail to honour its financial or contractual obligations to the Bank. The Bank uses the Advanced Internal Ratings Based (AIRB) approach under Basel III to determine minimum regulatory capital requirements for its domestic, U.S. and European credit portfolios, and certain international non-retail portfolios. The remaining credit portfolios are subject to the Standardized approach, which relies on the external credit ratings (e.g. S&P, Moody's, DBRS, etc.) of borrowers, if available, to compute regulatory capital for credit risk. For the Bank's Corporate, Bank and Sovereign AIRB portfolios, the key risk measures used in the quantification of regulatory capital for credit risk include probability of default (PD), loss given default (LGD) and exposure at default (EAD).

- Probability of default (PD) measures the likelihood that a borrower, with an assigned Internal Grade (IG) code, will default within a one-year time horizon. IG codes are a component of the Bank's risk rating system. Each of the Bank's internal borrower IG codes is mapped to a PD estimate.
- Loss given default (LGD) measures the severity of loss on a facility in the event of a borrower's default. The Bank's internal LGD grades are mapped to ranges of LGD estimates. LGD grades are assigned based on facility characteristics such as seniority, collateral type, collateral coverage and other structural elements. LGD for a defaulted exposure is based on the concept of economic loss and is calculated using the present value of repayments, recoveries and related direct and indirect expenses.
- Exposure at default (EAD) measures the expected exposure on a facility at the time of default.

All three risk measures are estimated using the Bank's historical data, as well as available external benchmarks, and are updated on a regular basis. The historical data used for estimating these risk measures exceeds the minimum five-year AIRB requirement for PD estimates and the minimum seven-year AIRB requirement for LGD and EAD estimates. Further analytical adjustments, as required under the Basel III Framework and OSFI's requirements set out in its Domestic Implementation Notes, including any input floor requirements, are applied to average estimates obtained from historical data. These analytical adjustments incorporate the regulatory requirements pertaining to:

- Long-run estimation of PD, which requires that PD estimates capture average default experience over a reasonable mix of high-default and low-default years of the economic cycle;
- Downturn estimation for LGD, which requires that LGD estimates appropriately reflect conditions observed during periods where credit losses are substantially higher than average; and
- Downturn estimation for EAD, which requires that EAD estimates appropriately reflect conditions observed during periods of economic downturn; and
- The addition of a margin of conservatism, which is related to the likely range of errors based on the identification and quantification of the various sources of uncertainty inherent in historical estimates.

These risk measures are used in the calculation of regulatory capital requirements based on formulas specified by the Basel framework. The credit quality distribution of the Bank's AIRB non-retail portfolio is shown in Table T30.

The risk measures are subject to a rigorous back-testing framework which uses the Bank's historical data to ensure that they are appropriately calibrated. Based on results obtained from the back-testing process, risk measures are reviewed, re-calibrated and independently validated on at least an annual basis in order to reflect the implications of new data, technical advances and other relevant information.

- As PD estimates represent long-run parameters, back-testing is performed using historical data spanning at least one full economic cycle. Realized PDs are back-tested using pre-defined confidence intervals, and the results are then aggregated to provide an overall assessment of the appropriateness of each PD estimate;
- The back-testing for LGD and EAD estimates is conducted from both long-run and downturn perspectives, in order to ensure that these estimates are adequately conservative to reflect both long-run and downturn conditions.

Portfolio-level back-testing results, based on a comparison of estimated and realized parameters for the four-quarter period ended at July 31, 2018, are shown in Table T31. During this period the actual experience was materially more favourable than the estimates as reflected within the risk parameters.

T31 Portfolio-level comparison of estimated and actual non-retail percentages

	Estimated(1)	Actual
Average PD	0.89	0.27
Average LGD	40.76	31.16
Average CCF(2)	48.92	10.64

(1) Estimated parameters are based on portfolio averages at Q3/17, whereas actual parameters are based on averages of realized parameters during the subsequent four quarters.
(2) EAD back-testing is performed through Credit Conversion Factor (CCF) back-testing, as EAD is computed using the sum of the drawn exposure and undrawn exposure multiplied by the estimated CCF.

Credit risk-weighted assets – Canadian retail

The AIRB approach is used to determine minimum regulatory capital requirements for the retail credit portfolio. The retail portfolio is comprised of the following Basel-based pools:

- Residential real estate secured exposures consists of conventional and high ratio residential mortgages and all other products opened under the Scotia Total Equity Plan (STEP), such as loans, credit cards and secured lines of credit;
- Qualifying revolving retail exposures consists of all unsecured credit cards and lines of credit;
- Other retail consists of term loans (secured and unsecured), as well as credit cards and lines of credit which are secured by assets other than real estate.

For the AIRB portfolios, the following models and parameters are estimated, subject to parameter input floors as required by OSFI:

- Probability of default (PD) is the likelihood that the facility will default within the next 12 months.
- Loss Given Default (LGD) measures the economic loss as a proportion of the defaulted balance.
- Exposure at Default (EAD) is the portion of expected exposures at time of default.

The data observation period used for PD/EAD/LGD estimates meets the five year minimum. Various statistical techniques including predictive modeling and decision trees were used to develop models. The models assign accounts into homogenous segments using internal and external borrower/facility-level credit experience. Every month, exposures are automatically re-rated based on risk and loss characteristics. PD, LGD and EAD estimates are then assigned to each of these segments incorporating the following regulatory requirements:

- PD incorporates the average long run default experience over an economic cycle. This long run average includes a mix of high and low default years.
- LGD is adjusted to appropriately reflect economic downturn conditions.
- EAD may also be adjusted to reflect downturn conditions when PD and EAD are highly correlated.
- Sources of uncertainty are reviewed regularly to ensure uncertainties are identified, quantified and included in calculations so that all parameter estimates reflect appropriate levels of conservatism.

The table below summarizes the credit quality distribution of the Bank's AIRB retail portfolio as at October 31, 2018.

T32 Retail AIRB portfolio exposure by PD range (1)

As at October 31 ($ millions)		2018					2017				
Category	PD Range	Exposure at default ($)(1)	RWA ($)(2)	PD (%)(3)(6)	LGD (%)(4)(6)	RW (%)(5)(6)	Exposure at default ($)(1)	RWA ($)(2)	PD (%)(3)(6)	LGD (%)(4)(6)	RW (%)(5)(6)
Exceptionally low	0.0000% – 0.0499%	**12,155**	**317**	**0.05**	**74**	**3**	16,026	476	0.05	66	3
Very low	0.0500% – 0.1999%	**89,544**	**4,605**	**0.09**	**29**	**5**	80,507	4,059	0.09	28	5
Low	0.2000% – 0.9999%	**107,036**	**21,654**	**0.52**	**33**	**20**	94,081	19,638	0.52	35	21
Medium low	1.0000% – 2.9999%	**20,578**	**11,970**	**2.04**	**58**	**58**	17,070	9,919	1.91	57	58
Medium	3.0000% – 9.9999%	**7,211**	**7,701**	**6.01**	**69**	**107**	8,583	8,827	5.56	75	103
High	10.0000% – 19.9999%	**1,370**	**1,819**	**14.68**	**52**	**133**	889	1,086	17.18	43	122
Extremely high	20.0000% – 99.9999%	**1,591**	**2,728**	**36.84**	**58**	**171**	1,453	2,566	36.86	62	177
Default(7)	100%	**588**	**–**	**100.00**	**82**	**–**	607	–	100.00	79	–
Total		**240,073**	**50,794**	**1.19**	**37**	**21**	219,216	46,571	1.21	38	21

(1) After credit risk mitigation.
(2) RWA prior to 6% scaling factor.
(3) PD – Probability of Default.
(4) LGD – Loss Given Default.
(5) RW – Risk Weight.
(6) Exposure at default used as basis for estimated weightings.
(7) Gross defaulted exposures, before any related allowances.

All AIRB models and parameters are monitored on a quarterly basis and independently validated annually by the Global Risk Management group. These models are tested to ensure rank ordering and back testing of parameters is appropriate. Comparison of estimated and actual loss parameters for the period ended July 31, 2018 is shown in Table T33. During this period the actual experience was materially more favourable than the estimates as reflected within the risk parameters.

T33 Estimated and actual loss parameters (1)

($ millions)	Average estimated PD (%)(2)(7)	Actual default rate (%)(2)(5)	Average estimated LGD (%)(3)(7)	Actual LGD (%)(3)(6)	Estimated EAD ($)(4)(7)	Actual EAD ($)(4)(5)
Residential real estate secured						
Residential mortgages						
Insured mortgages(8)	0.70	0.47	–	–	–	–
Uninsured mortgages	0.51	0.30	18.23	11.78	–	–
Secured lines of credit	0.39	0.26	28.87	17.25	91	83
Qualifying revolving retail exposures	2.00	1.64	79.69	70.04	681	593
Other retail	1.90	1.14	60.77	49.38	7	7

(1) Estimates and actual values are recalculated to align with new models implemented during the period.
(2) Account weighted aggregation.
(3) Default weighted aggregation.
(4) EAD is estimated for revolving products only.
(5) Actual based on accounts not at default as at four quarters prior to reporting date.
(6) Actual LGD calculated based on 24 month recovery period after default and therefore excludes any recoveries received after the 24 month period.
(7) Estimates are based on the four quarters prior to the reporting date.
(8) Actual and estimated LGD for insured mortgages are not shown. Actual LGD includes the insurance benefit, whereas estimated LGD may not.

Credit risk-weighted assets – International retail

International retail credit portfolios follow the Standardized approach and consist of the following components:

- Residential real estate secured lending;
- Qualifying revolving retail exposures consisting of all credit cards and lines of credit;
- Other retail consisting of term loans.

Under the standardized approach, in general, residential real estate secured lending products are risk-weighted 35% and other retail products receive a 75% risk-weight.

Market risk

Market risk is the risk of loss from changes in market prices including interest rates, credit spreads, equity prices, foreign exchange rates, and commodity prices, the correlations between them, and their levels of volatility.

For all material trading portfolios, the Bank applies its internal models to calculate the market risk capital charge. OSFI has approved the Bank's internal VaR, Stressed VaR, Incremental Risk Charge and Comprehensive Risk Measure models for the determination of market risk capital. The attributes and parameters of these models are described in the Risk Measurement Summary.

For some non-material trading portfolios, the Bank applies the Standardized Approach for calculating market risk capital. The standardized method uses a "building block" approach, with the capital charge for each risk category calculated separately.

Below are the market risk requirements as at October 31, 2018 and 2017:

T34 Total market risk capital

($ millions)	2018	2017
All-Bank VaR	**$ 124**	$ 110
All-Bank stressed VaR	**419**	300
Incremental risk charge	**95**	174
Comprehensive risk measure	**–**	–
Standardized approach	**31**	43
Total market risk capital	**$ 669**	$ 627

(1) Equates to $8,357 million of market risk-weighted assets (2017 – $7,839 million).

T35 Risk-weighted assets movement by key drivers

	Market risk	
($ millions)	2018	2017
RWA as at beginning of the year	**$ 7,839**	$ 10,571
Movement in risk levels (1)	**(554)**	(2,774)
Model updates(2)	**(1,963)**	42
Methodology and policy(3)	**–**	–
Acquisitions and disposals	**3,035**	–
RWA as at end of the year	**$ 8,357**	$ 7,839

(1) Movement in risk levels are defined as changes in risk due to position changes and market movements. Foreign exchange movements are embedded within Movement in risk levels.
(2) Model updates are defined as updates to the model to reflect recent experience, change in model scope.
(3) Methodology and policy is defined as methodology changes to the calculations driven by regulatory policy changes (eg. Basel III).

Market risk-weighted assets increased by $0.5 billion to $8.4 billion, as shown in Table T36, due primarily to the acquisitions which closed during the year, partly offset by model updates and movements in risk levels.

Operational risk

Operational risk is the risk of loss, whether direct or indirect, to which the Bank is exposed due to external events, human error, or the inadequacy or failure of processes, procedures, systems or controls. The Bank applies a combination of the Standardized Approach and the Advanced Measurement Approach for calculating operational risk capital as per the applicable Basel Standards.

Under the Standardized Approach (TSA), total capital is determined as the sum of capital for each of eight Basel defined business activities. The capital for each activity is the product of the relevant risk factor, as defined by Basel, applied to the gross income of each respective business activity.

In addition, the Bank received approval from OSFI to use the Advanced Measurement Approach (AMA) commencing the first quarter of 2017. Under AMA, regulatory capital measurement more directly reflects the Bank's operational risk environment through the use of a loss distribution approach model which uses internal loss events, external loss events, scenario analysis and other adjustments to arrive at a final operational risk regulatory capital calculation. Since the Bank's AMA requirements are floored at TSA requirements, the AMA model continued to have no impact on operational risk-weighted assets in 2018.

Operational risk-weighted assets increased by $4.4 billion during the year to $45.0 billion primarily due to the acquisitions which closed during the year and organic growth in gross income.

Internal capital

The Bank utilizes economic capital methodologies and measures to calculate internal capital. Internal capital is a measure of the unexpected losses inherent in the Bank's business activities. The calculation of internal capital relies on models that are subject to independent vetting and validation as required by the Bank's Model Risk Management Policy.

Management assesses its risk profile to determine those risks for which the Bank should attribute internal capital. The major risk categories included in internal capital are:

- Credit risk measurement is based on the Bank's internal credit risk ratings for derivatives, corporate and commercial loans, and credit scoring for retail loans. It is also based on the Bank's actual experience with recoveries and takes into account differences in term to maturity, probabilities of default, expected severity of loss in the event of default, and the diversification benefits of certain portfolios.
- Market risk for internal capital incorporates models consistent with the regulatory basis, with some exclusions, and calibrated to a higher 99.95% confidence interval, and models of other market risks, mainly structural interest rate and foreign exchange risks.
- Operational risk for internal capital is mainly based on the Bank's regulatory capital model using the Advanced Measurement Approach, and calibrated to a higher 99.95% confidence interval.
- Other risks include additional risks for which internal capital is attributed, such as business risk, significant investments, insurance risk and real estate risk.

In addition, the Bank's measure of internal capital includes a diversification benefit which recognizes that all of the above risks will not occur simultaneously. The Bank also includes the full amount of goodwill and intangible assets in the internal capital amount.

For further discussion on risk management and details on credit, market and operational risks, refer to the Risk Management section.

Off-Balance Sheet Arrangements

In the normal course of business, the Bank enters into contractual arrangements that are either consolidated or not required to be consolidated in its financial statements, but could have a current or future impact on the Bank's financial performance or financial condition. These arrangements can be classified into the following categories: structured entities, securitizations, guarantees and other commitments.

Structured entities

Structured entities are designed to accomplish certain well-defined objectives and for which voting or similar rights are not the dominant factor in deciding who controls the entity. The Bank may become involved with structured entities either at the formation stage or at a later date. The Bank controls an investee when it is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. The Bank's arrangements with structured entities include:

- Structured entities that are used to provide a wide range of services to customers, such as structured entities established to allow clients to securitize their financial assets while facilitating cost-efficient financing, and to provide certain investment opportunities.
- Structured entities that the Bank sponsors and actively manages (see discussion on other unconsolidated structured entities on page 69).

All structured entities are subject to a rigorous review and approval process in order that all significant risks are properly identified and addressed. The Bank consolidates all structured entities that it controls. For many of the structured entities that are used to provide services to customers, the Bank does not guarantee the performance of the structured entities' underlying assets, and does not absorb any related losses. For other structured entities, such as securitization and investment vehicles, the Bank may be exposed to credit, market, liquidity or operational risks. The Bank earns fees based on the nature of its association with a structured entity.

Consolidated structured entities

The Bank controls its U.S.-based multi-seller conduit and certain funding and other vehicles, and consolidates these structured entities in the Bank's consolidated financial statements.

As at October 31, 2018, total assets of consolidated structured entities were $48 billion, compared to $53 billion at the end of 2017. The change was primarily due to the winding up of Scotia Covered Bond Trust during the year. More details of the Bank's consolidated structured entities are provided in Note 15(a) to the consolidated financial statements.

Unconsolidated structured entities

There are two primary types of association the Bank has with unconsolidated structured entities:

- Canadian multi-seller conduits administered by the Bank, and
- Structured finance entities.

The Bank earned total fees of $28 million in 2018 (October 31, 2017 – $30 million) from certain structured entities in which it had a significant interest at the end of the year but did not consolidate. More information with respect to the Bank's involvement with these unconsolidated structured entities, including details of liquidity facilities and maximum loss exposure by category is provided below and in Note 15(b) to the consolidated financial statements.

Canadian multi-seller conduits administered by the Bank

The Bank sponsors two Canadian-based multi-seller conduits that are not consolidated. The Bank earned commercial paper issuance fees, program management fees, liquidity fees and other fees from these multi-seller conduits, which totaled $26 million in 2018, compared to $29 million in 2017. These multi-seller conduits purchase high-quality financial assets and finance these assets through the issuance of highly-rated commercial paper.

As further described below, the Bank's exposure to these off-balance sheet conduits primarily consists of liquidity support and temporary holdings of commercial paper. Although the Bank has power over the relevant activities of the conduits, it has limited exposure to variability in returns, which results in the Bank not consolidating the two Canadian conduits. The Bank has a process to monitor these exposures and significant events impacting the conduits to ensure there is no change in control, which could require the Bank to consolidate the assets and liabilities of the conduits at fair value.

A significant portion of the conduits' assets have been structured to receive credit enhancements from the sellers, including overcollateralization protection and cash reserve accounts. Each asset purchased by the conduits is supported by a backstop liquidity facility provided by the Bank in the form of a liquidity asset purchase agreement (LAPA). The primary purpose of the backstop liquidity facility is to provide an alternative source of financing in the event the conduits are unable to access the commercial paper market. Under the terms of the LAPA, in most cases, the Bank is not obliged to purchase defaulted assets.

The Bank's primary exposure to the Canadian-based conduits is the liquidity support provided, with total liquidity facilities of $4 billion as at October 31, 2018 (October 31, 2017 – $5 billion). The year-over-year decrease was due to normal business operations. As at October 31, 2018, total commercial paper outstanding for the Canadian-based conduits was $3.2 billion (October 31, 2017 – $3.1 billion) and the Bank held 0.1% of the total commercial paper issued by these conduits. Table T36 presents a summary of assets purchased and held by the Bank's two Canadian multi-seller conduits as at October 31, 2018 and 2017, by underlying exposure.

All of the funded assets have at least an equivalent rating of AA– or higher based on the Bank's internal rating program. Assets held in these conduits were investment grade as at October 31, 2018. Approximately 72% of the funded assets have final maturities falling within three years, and the weighted-average repayment period, based on cash flows, approximates 1.2 years.

T36 Assets held by Bank-sponsored Canadian-based multi-seller conduits

	2018			2017		
As at October 31 ($ millions)	Funded assets(1)	Unfunded commitments	Total exposure(2)	Funded assets(1)	Unfunded commitments	Total exposure(2)
Auto loans/leases	$ 2,375	$ 361	$ 2,736	$ 2,447	$ 464	$ 2,911
Trade receivables	469	312	781	161	649	810
Canadian residential mortgages	372	154	526	519	756	1,275
Total(3)	$ 3,216	$ 827	$ 4,043	$ 3,127	$ 1,869	$ 4,996

(1) Funded assets are reflected at original cost, which approximates estimated fair value.
(2) Exposure to the Bank is through global-style liquidity facilities.
(3) These assets are substantially sourced from Canada.

Structured finance entities
The Bank has interests in structured finance entities used to assist corporate clients in accessing cost-efficient financing through their securitization structures. The Bank's maximum exposure to loss from structured finance entities was $2,032 million as at October 31, 2018, (October 31, 2017 – $1,827 million). The change was primarily due to new structures entered into during the year.

Other unconsolidated structured entities
The Bank sponsors unconsolidated structured entities including mutual funds, in which it has insignificant or no interest at the reporting date. The Bank is a sponsor when it is significantly involved in the design and formation at inception of the structured entity, and the Bank's name is used by the structured entity to create an awareness of the instruments being backed by the Bank's reputation and obligation. The Bank also considers other factors, such as its continuing involvement and obligations to determine if, in substance, the Bank is a sponsor. For the year ended October 31, 2018, the Bank earned $2,121 million income from its involvement with the unconsolidated Bank-sponsored structured entities, a majority of which is from Bank-sponsored mutual funds (for the year ended October 31, 2017 – $2,021 million).

Securitizations

The Bank securitizes fully insured residential mortgage loans, Bank originated and others, through the creation of mortgage backed securities that are sold to Canada Housing Trust (CHT) and/or third party investors. The sale of such mortgages does not qualify for derecognition with the exception of social housing mortgage pools. The outstanding amount of off-balance sheet securitized social housing pools was $1,101 million as at October 31, 2018, compared to $1,264 million last year. The transferred mortgages sold to CHT and/or third party investors continue to be recognized on balance sheet along with the proceeds from sale treated as secured borrowings. More details have been provided in Note 14 in the consolidated financial statements.

The Bank securitizes a portion of its Canadian lines of credit and credit card receivables (receivables) through two Bank-sponsored structured entities. The receivables are comprised of unsecured personal lines of credit, securitized through Halifax Receivables Trust (Halifax) (formerly Hollis Receivables Term Trust II), and personal and small business credit card receivables, securitized through Trillium Credit Card Trust II (Trillium). Halifax and Trillium issue Class A notes to third-party investors and subordinated notes to the Bank, and the proceeds of such issuances are used to purchase co-ownership interests in the respective receivables originated by the Bank. The sale of such co-ownership interests does not qualify for derecognition and therefore the receivables continue to be recognized on the Bank's Consolidated Statement of Financial Position. Recourse of the note holders is limited to the purchased co-ownership interests. During the year, no receivables were securitized through Halifax (2017 – nil) and $1,678 million of receivables were securitized through Trillium (2017 – nil). As at October 31, 2018, the outstanding subordinated notes issued by Halifax of $205 million (2017 – $205 million) and Trillium of $134 million (2017 – $99 million), both held by the Bank, are eliminated on consolidation.

The Bank securitizes a portion of its Canadian auto loan receivables (receivables) through Securitized Term Auto Receivables Trust 2016-1, 2017-1, 2017-2, 2018-1 and 2018-2 (START) Bank-sponsored structured entities. The START entities issue multiple series of Class A notes to third-party investors and may issue Class A and/or subordinated notes to the Bank, and the proceeds of such issuances are used to purchase discrete pools of retail indirect auto loan receivables from the Bank on a fully serviced basis. The sale of such pools does not qualify for derecognition and therefore the receivables continue to be recognized on the Bank's Consolidated Statement of Financial Position. Recourse of the note holders is limited to the receivables. During the year, assets of $1,874 million were securitized through the START program (2017 – $2,176 million). As at October 31, 2018, the outstanding Class A and subordinated notes issued by the START entities that are held by the Bank of $447 million (2017 – $178 million) are eliminated on consolidation.

Guarantees and other commitments

Guarantees and other commitments are fee-based products that the Bank provides to its customers. These products can be categorized as follows:

- Standby letters of credit and letters of guarantee. As at October 31, 2018, these amounted to $35 billion, compared to $36 billion last year. These instruments are issued at the request of a Bank customer to secure the customer's payment or performance obligations to a third party.
- Liquidity facilities. These generally provide an alternate source of funding to asset-backed commercial paper conduits in the event a general market disruption prevents the conduits from issuing commercial paper or, in some cases, when certain specified conditions or performance measures are not met;
- Indemnification contracts. In the ordinary course of business, the Bank enters into many contracts where it may indemnify contract counterparties for certain aspects of its operations that are dependent on other parties' performance, or if certain events occur. The Bank cannot estimate, in all cases, the maximum potential future amount that may be payable, nor the amount of collateral or assets available under recourse provisions that would mitigate any such payments. Historically, the Bank has not made any significant payments under these indemnities;
- Loan commitments. The Bank has commitments to extend credit, subject to specific conditions, which represent undertakings to make credit available in the form of loans or other financings for specific amounts and maturities. As at October 31, 2018, these commitments amounted to $197 billion, compared to $186 billion last year. The year-over-year increase is primarily due to an increase in business activity.

These guarantees and loan commitments may expose the Bank to credit or liquidity risks, and are subject to the Bank's standard review and approval processes. For the guaranteed products, the dollar amounts represent the maximum risk of loss in the event of a total default by the guaranteed parties, and are stated before any reduction for recoveries under recourse provisions, insurance policies or collateral held or pledged.

Fees from the Bank's guarantees and loan commitment arrangements, recorded as credit fees in other income in the Consolidated Statement of Income, were $572 million in 2018, compared to $571 million in the prior year. Detailed information on guarantees and loan commitments is disclosed in Note 36 in the consolidated financial statements.

Financial Instruments

Given the nature of the Bank's main business activities, financial instruments make up a substantial portion of the Bank's financial position and are integral to the Bank's business. Assets that are financial instruments include cash resources, securities, securities purchased under resale agreements, loans and customers' liability under acceptances. Financial instrument liabilities include deposits, acceptances, obligations related to securities sold under repurchase agreements, obligations related to securities sold short, subordinated debentures and capital instrument liabilities. In addition, the Bank uses derivative financial instruments for both trading and hedging purposes.

Financial instruments are generally carried at fair value, except for non-trading loans and receivables, certain securities and most financial liabilities, which are carried at amortized cost unless designated as fair value through profit and loss at inception.

Unrealized gains and losses on the following items are recorded in other comprehensive income (OCI):

- debt instruments measured at fair value through OCI,
- equity instruments measured at fair value through OCI,
- derivatives designated as cash flow hedges, and
- net investment hedges.

Gains and losses on derecognition of debt instruments at FVOCI and impairment provisions are reclassified from OCI to the Consolidated Statement of Income under non-interest income. Gains and losses on derecognition of equity instruments designated at FVOCI are not reclassified from OCI to the consolidated statement of income. Gains and losses on cash flow hedges and net investment hedges are recorded in the Consolidated Statement of Income when the hedged item affects income.

The Bank's accounting policies for derivatives and hedging activities are further described in Note 3 to the consolidated financial statements.

Interest income and expense on non-trading interest-bearing financial instruments are recorded in the Consolidated Statement of Income as part of net interest income. Credit losses related to loans are recorded in the provision for credit losses in the Consolidated Statement of Income. Interest income and expense, as well as gains and losses, on trading securities and trading loans are recorded in non-interest income – trading revenues.

Several risks arise from transacting financial instruments, including credit risk, liquidity risk, operational risk and market risk. The Bank manages these risks using extensive risk management policies and practices, including various Board-approved risk management limits.

A discussion of the Bank's risk management policies and practices can be found in the Risk Management section on pages 72 to 109. In addition, Note 37 to the consolidated financial statements presents the Bank's exposure to credit risk, liquidity risk and market risks arising from financial instruments as well as the Bank's corresponding risk management policies and procedures.

There are various measures that reflect the level of risk associated with the Bank's portfolio of financial instruments. For example, the interest rate risk arising from the Bank's financial instruments can be estimated by calculating the impact of a 100 basis point increase or decrease in interest rates on annual income, and the economic value of shareholders' equity, as described on page 94. For trading activities, Table T46 discloses the average one-day Value at Risk by risk factor. For derivatives, based on the maturity profile of the notional amount of the Bank's derivative financial instruments, only 18% (2017 – 17%) had a term to maturity greater than five years.

Note 10 to the consolidated financial statements provides details about derivatives used in trading and hedging activities, including notional amounts, remaining term to maturity, credit risk and fair values.

The fair value of the Bank's financial instruments is provided in Note 7 to the consolidated financial statements along with a description of how these amounts were determined.

The fair value of the Bank's financial instruments was favourable when compared to their carrying value by $2.8 billion as at October 31, 2018 (October 31, 2017 – favourable $1.7 billion). This difference relates mainly to loan assets, deposit liabilities, subordinated debentures and other liabilities. These changes are primarily driven by movements in interest rates and by volume changes. Fair value estimates are based on market conditions as at October 31, 2018, and may not be reflective of future fair values. Further information on how fair values are estimated is contained in the section on critical accounting estimates.

Disclosures specific to certain financial instruments designated at fair value through profit and loss can be found in Note 9 to the consolidated financial statements. These designations were made primarily to significantly reduce accounting mismatches.

Selected Credit Instruments – Publically Known Risk Items

Mortgage-backed securities

Total mortgage-backed securities held in the Non-trading and Trading portfolios are shown in Table T37.

T37 Mortgage-backed securities

As at October 31 Carrying value ($ millions)	2018 Non-trading portfolio	2018 Trading portfolio	2017 Non-trading portfolio	2017 Trading portfolio
Canadian NHA mortgage-backed securities (1)	**$ 2,254**	**$ 1,791**	$ 1,810	$ 1,709
Commercial mortgage-backed securities	**–**	**15**	–	1
Other residential mortgage-backed securities	**504**	**–**	461	–
Total	**$ 2,758**	**$ 1,806**	$ 2,271	$ 1,710

(1) Canada Mortgage and Housing Corporation provides a guarantee of timely payment to NHA mortgage-backed security investors.

Collateralized debt obligations

Trading portfolio

The Bank does not have any collateralized debt obligations in its trading portfolios as at October 31, 2018 and October 31, 2017.

Other

As at October 31, 2018, the Bank has insignificant exposure to highly leveraged loans awaiting syndication, auction-rate securities,Alt-A type loans, monoline insurance and investments in structured investment vehicles.

RISK MANAGEMENT

Effective risk management is fundamental to the success of the Bank, and is recognized as key in the Bank's overall approach to strategy management. Scotiabank has a strong, disciplined risk culture where managing risk is a responsibility shared by all of the Bank's employees.

Risk Management Framework

The primary goals of risk management are to ensure that the outcomes of risk-taking activities are consistent with the Bank's strategies and risk appetite, and that there is an appropriate balance between risk and reward in order to maximize shareholder value. Scotiabank's Enterprise-Wide Risk Management Framework articulates the foundation for achieving these goals.

This Framework is subject to constant evaluation to ensure that it meets the challenges and requirements of the global markets in which the Bank operates, including regulatory standards and industry best practices. The risk management programs of the Bank's subsidiaries align in all material respects to the Bank's risk management framework, although the actual execution of their programs may be different.



The Bank's risk management framework is applied on an enterprise-wide basis and consists of five key elements:

- Risk Governance
- Risk Appetite
- Risk Management Tools
- Risk Identification and Assessment
- Risk Culture

Risk Management Principles

Risk-taking and risk management activities across the enterprise are guided by the following principles:

Risk and Reward – business and risk decisions are consistent with strategies and risk appetite.

Understand the Risks – all material risks to which the Bank is exposed, including both financial and non-financial, are identified and managed.

Forward Thinking – emerging risks and potential vulnerabilities are proactively identified.

Shared Accountability – every employee is responsible for managing risk.

Customer Focus – understanding our customers and their needs is essential to all business and risk decision-making.

Protect our Brand – all risk taking activities must be in line with the Bank's risk appetite, Code of Conduct, values and policy principles.

Compensation – performance and compensation structures reinforce the Bank's values and promote sound risk taking behaviour.

Risk Governance

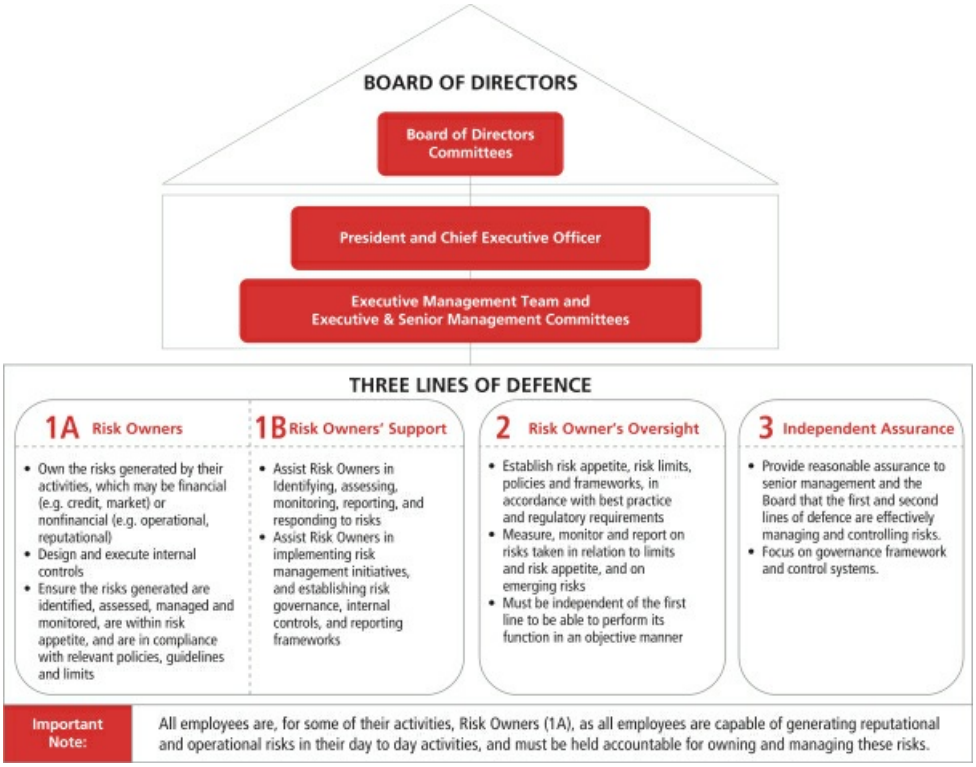
Effective risk management begins with effective risk governance.

The Bank has a well-established risk governance structure, with an active and engaged Board of Directors supported by an experienced executive management team. Decision-making is highly centralized through a number of senior and executive risk management committees.

The Bank's risk management framework is predicated on the three-lines-of-defence model. Within this model,

- the First Line of Defence (typically comprised of the business lines and most corporate functions) incurs and owns the risks,
- the Second Line of Defence (typically comprised of control functions such as Global Risk Management, Global Compliance, Global AML/ATF and Global Finance) provides independent oversight and objective challenge to the First Line of Defence, as well as monitoring and control of risk, and
- the Third Line of Defence (Internal Audit) provides enterprise-wide independent assurance over the design and operation of the Bank's internal control, risk management and governance processes throughout the first and second lines of defence.

In this risk governance structure, employees in every area of the organization are responsible for risk management.



The Board of Directors: as the top of the Bank's risk management governance structure, provides oversight, either directly or through its committees, to satisfy itself that decision making is aligned with the Bank's strategies and risk appetite. The Board receives regular updates on the key risks of the Bank – including a quarterly comprehensive summary of the Bank's risk profile and performance of the portfolio against defined limits – and approves key risk policies, frameworks, and limits.

The Risk Committee of the Board: assists the Board in fulfilling its responsibilities for identifying and monitoring key financial and non-financial risks. The Committee assists the Board by providing oversight to the risk management, compliance and anti-money laundering/anti-terrorist finance functions at the Bank. This includes periodically reviewing and approving the Bank's key risk management policies, frameworks and limits and satisfying itself that management is operating within the Bank's Enterprise Risk Appetite Framework. The Committee also oversees the independence of each of these control functions, including the effectiveness of the heads of these functions, as well as the functions themselves.

Audit and Conduct Review Committee of the Board: assists the Board by providing oversight on the effectiveness of the Bank's system of internal controls. The Committee oversees the integrity of the Bank's consolidated financial statements and related quarterly results. This Committee assists the Board in fulfilling its oversight responsibilities for setting standards of conduct and ethical behaviour, and the oversight of conduct review and conduct risk. The Committee also oversees the Bank's compliance with legal and regulatory requirements, and oversees the Global Finance and Audit functions at the Bank.

Human Resources Committee of the Board: in conjunction with the Risk Committee of the Board, satisfies itself that adequate procedures are in place to identify, assess and manage the risks associated with the Bank's material compensation programs and that such procedures are consistent with the Bank's risk management programs. The Committee has further responsibilities relating to leadership, succession planning and total rewards.

Corporate Governance Committee of the Board: acts in an advisory capacity to the Board to enhance the Bank's corporate governance through a continuing assessment of the Bank's approach to corporate governance and makes policy recommendations.

President and Chief Executive Officer (CEO): reports directly to the Board and is responsible for defining, communicating and implementing the strategic direction, goals and core values for Scotiabank that maximize long term shareholder value. The CEO oversees the establishment of the Bank's risk appetite, in collaboration with the Chief Risk Officer and Chief Financial Officer, which is consistent with the Bank's short and long term strategy, business and capital plans, as well as compensation programs.

Chief Risk Officer (CRO): reports to the CEO and is responsible for the overall management of Global Risk Management, Global Compliance and Global AML/ATF. The CRO and the heads of Global Compliance and Global AML/ATF also have unfettered access to the Risk Committee of the Board to ensure their independence. As a senior member of the Bank's executive management team, the CRO participates in strategic decisions related to where and how the Bank will deploy its various sources of capital to meet the performance targets of the business lines.

Global Risk Management (GRM): supports the Bank's objectives and is mandated to maintain an ongoing and effective enterprise-wide risk management framework that resonates through all levels of the Bank. GRM is responsible for providing reasonable assurance to executive management, the Board of Directors and shareholders that risks are actively identified, managed and communicated to all key stakeholders. This is achieved through reliable and timely reporting. GRM's mission is to ensure that the outcomes of risk taking activities are consistent with the Bank's strategies and risk appetite, and that there is an appropriate balance between risk and reward in order to maximize shareholder value.

Global Compliance: on an enterprise-wide basis, promotes and reports on ethical conduct and regulatory compliance throughout Scotiabank. Global Compliance develops policy and provides independent oversight and effective challenge of compliance risk management in the Bank's business lines and corporate functions. It acts as a consultant and educator on regulatory compliance, internal policies and procedures and is responsible for conducting ongoing risk-based enterprise-wide assessments, monitoring, testing and other activities to gain reasonable assurance as to the adequacy of, adherence to, and effectiveness of the Bank's Compliance Risk Management Program.

Global AML/ATF: on an enterprise-wide basis, develops standards to be followed in effectively controlling money laundering, terrorist financing, and sanctions risks. Global AML/ATF is responsible for maintaining the program current with Scotiabank needs, industry practice, and AML/ATF and sanctions legal and regulatory requirements, as well as providing risk-based independent oversight of Scotiabank's compliance with these requirements and standards.

Global Finance: leads enterprise-wide financial strategies which support the Bank's ability to maximize sustainable shareholder value, and actively manages the reliable and timely reporting of financial information to management, the Board of Directors and shareholders, regulators, as well as other stakeholders. This reporting includes the Bank's consolidated financial statements and related quarterly and annual results, as well as financial regulatory filings. Global Finance executes the Bank's financial and capital management strategies with appropriate governance and control, while ensuring its processes are efficient and effective.

Internal Audit: reports independently to the Audit and Conduct Review Committee of the Board on the design and operating effectiveness of the Bank's risk governance and risk management framework. The mission of the audit department is to provide enterprise-wide independent, objective assurance over the design and operation of the Bank's internal controls, risk management, operational governance processes and to provide consulting services designed to improve the Bank's operations.

Business Line and Corporate Functions: as the first line of defence in the Three Lines of Defence model, are accountable for effective management of the risks within their business lines and functions through identifying, assessing, mitigating, monitoring and reporting the risks. Business lines and corporate functions actively implement effective internal controls to manage risk and maintain activities within risk appetite and policies. Further, business lines have processes to be able to effectively identify, monitor and report against allocated risk appetite limits.

Risk Appetite

Effective risk management requires clear articulation of the Bank's risk appetite and how the Bank's risk profile will be managed in relation to that appetite.

The Bank's Enterprise Risk Appetite Framework (RAF) articulates the amount and types of risk the Bank is willing to take in order to meet its strategic objectives. The Enterprise RAF consists of the risk capacity, risk appetite statement, risk appetite metrics and roles and responsibilities. Together, the application of these components helps to ensure the Bank stays within appropriate risk boundaries, finds an optimal balance between risk and return, and supports a strong risk culture.

Scotiabank's risk appetite is integrated into the strategic and capital planning process and is reviewed annually by senior management who recommend it to the Board for approval. Business lines, sub-business lines, control functions and key subsidiaries develop their own risk appetite frameworks and/or statements, which are aligned with the Bank's Enterprise RAF.



Risk Appetite Statement

The Bank's Risk Appetite Statement can be summarized as follows:

- The Bank favours businesses that generate sustainable, consistent and predictable earnings.
- The Bank expects to take certain risks in order to generate earnings, but sets limits to ensure risk taking activities are in line with the Bank's strategic objectives, risk culture, and risk appetite.
- The Bank limits its risk-taking activities to those that are well understood and where there is sufficient expertise, resources and infrastructure to effectively measure and manage the risk and balance risk with reward.
- Capital considerations are part of all material risk decisions.
- The Bank has low appetite for reputational, legal, regulatory or taxation risk, and no appetite for breaches of the Code of Conduct.
- All employees of the Bank are responsible for understanding the limits and any other boundaries that apply to their activities.

Risk Appetite Metrics

Risk appetite metrics provide clear risk limits, which are critical in implementing effective risk management. Certain risk appetite metrics are supported by management level limit structures and controls, as applicable.

Other components of Scotiabank's risk appetite metrics:

- Set risk capacity and appetite in relation to regulatory constraints
- Use stress testing to provide forward-looking metrics
- Ensure Scotiabank's credit rating remains strong
- Minimize earnings volatility
- Limit exposure to operational events that can have an impact on earnings, including regulatory fines
- Ensure reputational risk is top of mind and strategy is being executed within operating parameters

Risk Management Tools

Effective risk management includes tools that are guided by the Bank's risk appetite framework and integrated with the Bank's strategies and business planning processes.

Scotiabank's risk management framework is supported by a variety of risk management tools that are used together to manage enterprise-wide risks. Risk management tools are regularly reviewed and updated to ensure consistency with risk-taking activities, and relevance to the business and financial strategies of the Bank.

Policies, Frameworks & Limits

Policies and Frameworks

The Bank develops and implements its key risk policies and frameworks in consultation with the Board. Such policies and frameworks are also subject to the requirements and guidelines of the Office of the Superintendent of Financial Institutions (OSFI), the Bank Act, and the Canada Deposit Insurance Corporation (CDIC). Policy and framework development and implementation reflect best governance practices which the Bank strives to adhere to at all times. The Bank also provides advice and counsel to its subsidiaries in respect of their risk policies and frameworks to ensure alignment with the Bank, subject to the local regulatory requirements of each subsidiary.

Policies and frameworks apply to specific types of risk or to the activities that are used to measure and control risk exposure. They are based on recommendations from risk management, internal audit, business lines, and senior and executive management. Industry best practices and regulatory requirements are also factored into the policies and frameworks, are guided by the Bank's risk appetite, and set the limits and controls within which the Bank and its subsidiaries can operate. Key risk policies and frameworks are supported by manuals, procedures and guidelines.

Limits

Limits control risk-taking activities within the appetite and tolerances established by the Board and executive management. Limits also establish accountability for key tasks in the risk-taking process and establish the level or conditions under which transactions may be approved or executed.

Risk Measurement

Models

The use of quantitative risk methodologies and models is balanced by a strong governance framework and includes the application of sound and experienced judgment. The development, independent review, and approval of models are subject to formalized policies such as the Model Risk Management Policy and oversight of senior management committees such as the Model Review Committee (for market risk, counterparty credit risk, and liquidity risk models). Key models used in the calculation of regulatory capital on an enterprise basis are OSFI approved. All in-scope models are incorporated into the Bank's framework for governance and control of model risk to ensure that they continue to perform in line with regulatory requirements. The Bank uses models for a range of purposes including:

- valuing transactions,
- measuring risk exposures,
- determining credit risk ratings and parameters,
- calculating internal economic and regulatory capital
- calculating expected credit risk loss.

Monitoring and Reporting

The Bank continuously monitors its risk exposures to ensure business activities are operating within approved limits or guidelines, and the Bank's strategies and risk appetite. Breaches, if any, of these limits or guidelines are reported to senior management and/or the Board depending on the limit or guideline.

Risk reporting aggregates measures of risk across products and businesses, and are used to ensure compliance with risk policies, limits, and guidelines. They also provide a clear statement of the amounts, types, and sensitivities of the various risks in the portfolio. Senior management and the Board use this information to understand the Bank's risk profile and the performance of the portfolios. A comprehensive summary of the Bank's risk profile and performance of the portfolio is presented quarterly to the Board of Directors.

Forward-Looking Exercises

Stress Testing

Stress testing programs at both the enterprise-wide level and individual risk level allow the Bank to estimate the potential impact on the Bank's income and capital as a result of significant changes in market conditions, credit environment, liquidity demands, or other risk factors. Enterprise-wide stress testing is also integrated with both the strategic and financial planning processes, as well as financial crisis management planning. The development, approval and on-going review of the Bank's stress testing programs are subject to policy, and the oversight of the Stress Testing and Credit Loss Models Committee or other management committees as appropriate. Where appropriate, the Board of Directors or the Risk Committee of the Board approves stress testing limits for certain risk factors, and receives reports on performance regularly. Each program is developed with input from a broad base of stakeholders, and results are integrated into management decision making processes for capital, funding, market risk limits, and credit risk appetite. The stress testing programs are designed to capture a number of enterprise-wide stress scenarios with differing severities, and time horizons.

Other Testing

Other tests are conducted as required at the enterprise-wide level and within specific functional areas to test the decision making processes of the Executive Management team and key personnel, by simulating a potential stress scenario. Simulated stress scenarios may include a number of complexities and disruptions through which Executive Management are engaged to make certain key decisions. Generally, the objectives of the simulations can include testing (1) the executability of activation protocols, (2) operational readiness, (3) the flexibility of the executive decision making process, and (4) the process by which actions to be taken are prioritized. The exercises may also be designed to test the applicability and relevance of available data and the timeliness of reporting for decision making under stressed/crisis conditions.

Risk Identification and Assessment

Effective risk management requires a comprehensive process to identify risks and assess their materiality.

Principal Risk Types

The Bank's principal risk types are reviewed annually to determine that they adequately reflect the Bank's risk profile. The principal risks can be categorized into two main categories:

Financial Risks:

Credit, Market, Liquidity, Insurance

These are risks that are directly associated with the Bank's primary business and revenue generating activities. The Bank understands these risks well and takes them on in order to generate sustainable, consistent and predictable earnings. Financial risks are generally quantifiable and are relatively predictable. The Bank has higher risk appetite for financial risks which are considered to be a fundamental part of doing business; but only when they are well understood, within established limits, and meet the desired risk and return profile.

Non-Financial (i.e. Core) Risks:

Operational, IT & Cybersecurity, Data Compliance, ML& TF, Environmental, Reputational, Strategic

These are risks that are not directly associated with the Bank's primary business and revenue generating activities, but nevertheless are inherent in our business and can have significant negative strategic, business, financial and/or reputational consequences if not managed properly. In comparison to financial risks, Core risks are less predictable and more difficult to define and measure. The Bank has low risk appetite for Core risks and mitigates these risks through robust internal controls and processes.

Assessment of Risks

On an annual basis, the Bank undergoes a Bank-wide risk assessment that identifies the material risks faced by the Bank for the Internal Capital Adequacy Assessment Process (ICAAP) and the determination of internal capital. This process evaluates the risks and determines the pervasiveness of the risk across multiple business lines, the significance of the risk to a specific business line, the likelihood and potential impact of the risk and whether the risk may cause unexpected losses in income and therefore would be mitigated by internal capital. The process also reviews other evolving and emerging risks and includes qualitative considerations such as strategic, economic and environmental risk factors. The identified risks are ascribed a rating of how probable and impactful they may be and are used as an important input in the ICAAP process and the determination of internal capital.

Top and Emerging Risks

The Bank is exposed to a variety of top and emerging risks. These risks can potentially adversely affect the Bank's business, financial performance, reputation, and business strategies. As part of our risk management approach, we proactively identify, assess, review, monitor and manage a broad range of top and emerging risks so that appropriate risk mitigation strategies can be taken. Every quarter, a listing and a brief discussion of selected top and emerging risks is presented to Senior Management and the Board of Directors.

Other Considerations

Risk identification and assessment is performed on an ongoing basis through the following:

- Transactions – risks, including credit and market exposures, are assessed by the business lines and reviewed by GRM, as applicable.
- Monitoring – risks are identified by constantly monitoring and reporting current trends and analysis.
- New Products and Services – new products and services are assessed for potential risks through a standardized process.
- Strategic Investments – investment transactions are thoroughly reviewed for risks and are approved by the Strategic Transactions and Investment Committee (STIC) who provides advice & counsel and decisions on effective allocation and prioritization of resources.

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Risk Culture

Effective risk management requires a strong, robust, and pervasive risk management culture where every Bank employee is a risk manager and is responsible for managing risks.

The Bank's risk culture is influenced by numerous factors including the interdependent relationship amongst the Bank's risk governance structure, risk appetite, strategy, organizational culture, and risk management tools.



The Bank's risk culture is supported through the following foundational elements:

- Tone from the Top – Clear and consistent communication from leaders on risk behavior expectations and the importance of Scotiabank's values.
- Accountability – All Scotiabankers are accountable for risk management in accordance with the Three Lines of Defence model.
- Incentives – Performance and compensation structures encourage desired behaviors and reinforce the Bank's risk culture.
- Effective Challenge – Scotiabankers are encouraged to have a critical attitude – transparency and open dialogue is promoted.

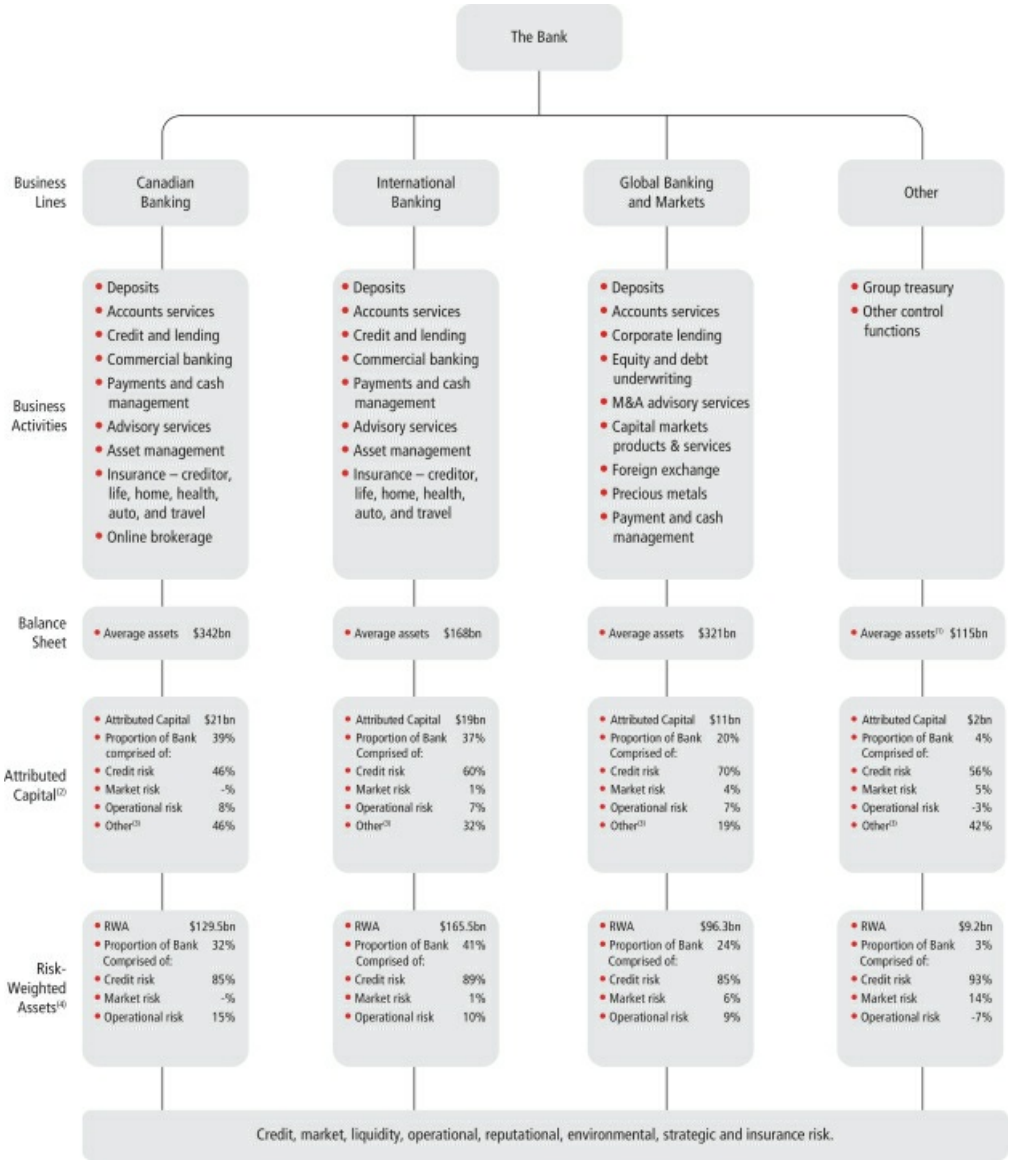
Other elements that influence and support the Bank's risk culture:

- Code of Conduct: describes the minimum standards of behaviour to which all directors, officers, and employees must adhere and attest to on an annual basis.
- Values: Integrity – Act With Honour; Respect – Value Every Voice; Accountability – Make It Happen; Passion – Be Your Best.
- Communication: the Bank actively communicates risk appetite, and how it relates to Scotiabankers, to promote a sound risk culture.
  - Reputation is everything,
  - Information is key,
  - Success depends on you,
  - Know your boundaries.
- Compensation: programs are structured to discourage behaviours that are not aligned with the Bank's values and Code of Conduct, and ensure that such behaviors are not rewarded.
- Training: risk culture is continually reinforced by providing effective and informative mandatory and non-mandatory training modules for all employees on a variety of risk management topics.
- Decision-making on risk issues is highly centralized: the flow of information and transactions to senior and executive committees keeps management well informed of the risks the Bank faces, and ensures that transactions and risks are aligned with the Bank's risk appetite.
- Executive Mandates: all Executives across the Bank have risk management responsibilities within their mandates.

Principal Risk Types

Risk Type	Key Governing Documentation	Ways that they support Risk Appetite
Credit Risk	• Credit Risk Policy • Credit Risk Appetite • Residential Mortgage Underwriting Policy	Quantitative limits, such as: Credit Risk Appetite limits at the all-Bank level and Business Line level; Exposure to a single counterparty or group of related parties; Country risk; and Industry concentrations.
Market Risk	• Market and Structural Risk Management Policy	Quantitative limits, such as: Value at Risk (VaR); Stress test results; Debt investment exposures; and Structural interest rate and foreign exchange exposures.
Liquidity Risk	• Liquidity Risk and Collateral Management Policy	Quantitative limits, such as: Liquidity Coverage Ratio (LCR); Minimum amounts of high quality liquid assets that can be readily sold or pledged to provide contingent liquidity; Limits to control the maximum net cash outflow over a specified horizon; and minimize concentration through diversification of funding source.
Insurance Risk	• Insurance Risk Policy • Insurance Risk Management Framework	Where insurance risks are taken, it is on a selective basis to achieve stable and sustainable earnings; and the risk assumed is diversified geographically and by product. Quantitative limits, such as Insurance Earnings at Risk metrics are included in the Bank's Risk Appetite Statement.
Operational Risk	• Operational Risk Management Policy and Framework • Internal Control Policy • New Initiative Risk Management Policy • Global Third Party Risk Management Policy • Financial Crisis Management Planning policies & framework	Operational risk appetite expresses how much residual risk the Bank is willing to tolerate and is expressed quantitatively by an aggregate loss event limit, a single event loss limit, and a variety of limits for individual categories of operational risk.
Information Technology & Cybersecurity Risk	• IT Risk Management Policy and Framework • Information Security Policy and Governance Framework	The Bank has established minimum expectations and requirements for the systematic identification, measurement, mitigation and monitoring of IT and Cybersecurity risk, including requirements for the protection of information throughout its lifecycle.
Data Risk	• Data Management Policy • Data Governance Framework	The Bank has established appropriate minimum expectations to implement data management and governance through data quality business rules and dimensions in support of the Bank's risk appetite enabling the Bank to measure the level of data quality on its critical data elements.
Compliance Risk	• Compliance Policy • Code of Conduct	Compliance Risk appetite is based on the moderate all-Bank Residual Compliance Risk Rating obtained through the annual Compliance Risk & Control Assessment.
Money Laundering & Terrorist Financing (ML/TF) Risk	• AML/ATF and Sanctions Policy • AML/ATF and Sanctions Handbook	The Bank has no appetite for entering into relationships with businesses or individuals engaged in illegal activities, or with businesses engaged in improper, quasi-legal, or inappropriate activities.
Reputational Risk	• Reputational Risk Policy	Low appetite for reputational, legal, or taxation risk arising in business activities, initiatives, products, services, transactions or processes, or from a lack of suitability of products for clients.
Environmental Risk	• Environmental Policy	The Bank has policies and procedures in place to ensure that it provides loans to borrowers that demonstrate an ability and willingness to practice sound environmental risk management.
Strategic Risk	• Annual Strategy Report to the Board of Directors	Strategy report considers linkages between the Bank's Enterprise Risk Appetite Framework with the enterprise strategy, business line strategies and corporate function strategies.

T38 Exposure to risks arising from the activities of the Bank's businesses



(1) Average assets for the Other segment include certain non-earning assets related to the business lines.
(2) Attributed Capital is a combination of regulatory: (i) Risk-based capital and (ii) Leverage capital. Attributed Capital is reported on a quarterly average basis.
(3) Includes Attributed Capital for significant investments, goodwill, intangibles and leverage capital.
(4) Risk-weighted assets (RWA) are as at October 31, 2018 as measured for regulatory purposes in accordance with the Basel III approach.

Top and emerging risks

The Bank is exposed to a variety of top and emerging risks. These risks can potentially adversely affect the Bank's business strategies, financial performance, and reputation. As part of our risk management approach, we proactively identify, assess, review, monitor and manage a broad range of top and emerging risks and undertake appropriate risk mitigation strategies. Every quarter, a listing and a brief discussion of selected top and emerging risks is presented to Senior Management and the Board of Directors.

The Bank's top and emerging risks are as follows:

Geopolitical risk

Geopolitical risks could affect volatility in foreign exchange and capital markets globally. This affects all participants in these markets. In the short run, a market shock could potentially impact the Bank's trading and non-trading market activities and revenues. Over a longer period of time, the more broadly based macroeconomic effects could potentially impact the Bank's exposures to customers and market segments impacted by those shocks. Although it is difficult to predict where new geopolitical disruption will occur, the Bank's stress testing program assists in evaluating the potential impact of severe conditions, whether caused by geopolitical or other circumstances. Management's strong understanding of the local political landscapes and macroeconomic environments in which the Bank operates, combined with the Bank's business model and diversified geographic footprint, serve as ongoing mitigants to this risk.

Legal and regulatory compliance risk

The Bank is subject to extensive regulation in the jurisdictions in which it operates. Although the Bank continually monitors and evaluates the potential impact of regulatory developments to assess the impact on our businesses and to implement any necessary changes, regulators and private parties may challenge our compliance. Failure to comply with legal and regulatory requirements may result in fines, penalties, litigation, regulatory sanctions, enforcement actions and limitations or prohibitions from engaging in business activities, all of which may negatively impact the Bank's financial performance and its reputation. In addition, day-to-day compliance with existing laws and regulations has involved and will continue to involve significant resources, including requiring the Bank to take actions or incur greater costs than anticipated, which may negatively impact the Bank's financial performance. Such changes could also adversely impact the Bank's business strategies or limit its product or service offerings, or enhance the ability of the Bank's competitors to offer their own products and services that rival the Bank's. Regulators have also evidenced an increase focus on conduct risk. This focus could lead to more regulatory or other enforcement actions including for practices which may historically have been considered acceptable.

Anti-money laundering

Money laundering and terrorist financing are receiving significant attention as nations attempt to deal with the harmful legal, economic, and social consequences of illegal activities. Governments, law enforcement agencies, and regulators around the world employ a variety of means, including establishing regulatory requirements on financial institutions, to curtail the ability of criminal and terrorist elements to profit from, or finance, their activities. It is widely recognized that financial institutions are uniquely positioned and possess the necessary infrastructure to assist in the fight against money laundering, terrorist financing, and criminal activity through prevention, detection, and the exchange of information.

Money laundering, terrorist financing and economic sanctions violations represent regulatory, legal, financial and reputational risk to the Bank. Scotiabank is subject to a number of expanding and constantly evolving anti-money laundering/anti-terrorist financing (AML/ATF) and economic sanctions, laws and regulations internationally given the Bank's global footprint.

The Bank is committed to sustaining secure financial systems in the countries around the world in which it maintains operations by taking the necessary action, using a risk-based approach. The Bank's AML program includes policies and internal controls with respect to client identification and due diligence, transaction monitoring, investigating and reporting of suspicious activity, and evaluation of new products and services to prevent and/or detect activities that may pose AML risk to the Bank. The AML program also facilitates an annual enterprise-wide AML/ATF risk assessment process and ensures that all employees, including the Board of Directors, undergo initial and ongoing AML/ATF training.

Technology, information and cyber security risk

Technology, information and cyber security risks continue to impact financial institutions and other businesses in Canada and around the globe. Threats are not only increasing in volume but in their sophistication as adversaries use ever evolving technologies and attack methodologies. The technology environment of the Bank, its customers and the third parties providing services to the Bank, may be subject to attacks, breaches or other compromises. Incidences like these can result in disruption to operations, misappropriation or unauthorized release of confidential, financial or personal information, and reputational damage, among other things. The Bank proactively monitors and manages the risks and constantly updates and refines programs as threats emerge to minimize disruptions and keep systems and information protected. In addition, the Bank has purchased insurance coverage to help mitigate against certain potential losses associated with cyber incidents.

Technology innovation and disruption

Fast evolving technology innovation continues to impact the financial services industry and its customers. Increasingly, non-traditional new participants are entering certain segments of the market and challenge the position of traditional financial institutions. New participants may use advanced technologies and analytical tools to innovate at an accelerating speed which has the potential to impact revenues and costs in certain of the Bank's businesses. In response to increased customer demands, needs and expectations, the Bank has embarked on a multi-year digital transformation with the aspiration to be a digital leader in the financial services industry. To support this strategy the Bank has opened digital factories in Toronto and its key international markets in Mexico, Peru, Chile and Colombia. These factories contribute to financial innovation through partnerships with smaller financial technology companies. In addition, the Bank makes material investments in skills training and education through various digital partnerships with Canadian universities and other organizations.

Third party service providers

As the Bank continues to expand its ecosystem of third party information technology (IT) service and cloud providers and FinTec partners, the traditional boundaries of where the Bank is able to assert control becomes blurred. There is growing dependency on the effectiveness of the control environment in place at IT vendors to limit the impacts of vendor availability and security incidents on the Bank's operations, intellectual property, and reputation. Additionally, third party service providers other than IT vendors, as well as service providers to those third parties (i.e. fourth party vendors) can also fall victim to systems, data and privacy breaches if their control environments fail to operate effectively. Any such breaches could impact the Bank if the Bank's data is shared with such vendors in the course of their provision of services to the Bank. The Bank continues to enhance the resources, capabilities and accountabilities of third party risk management areas within the first and second line of defence areas.

Canadian household indebtedness

Canadian household indebtedness has been stable in recent quarters due to slowdown in new lending volumes mainly for new mortgages, as housing market adapts to tighter qualifying criteria as well as increasing interest rates. These market factors could cause a change in debt service ratios, largely driven by an increasing interest rate environment. The Bank actively manages its lending portfolios and performs stress tests considering these sensitivities, while continuing to enhance risk management capabilities through investments in technology and analytics.

MANAGEMENT'S DISCUSSION AND ANALYSIS

Credit Risk

Credit risk is the risk of loss resulting from the failure of a borrower or counterparty to honour its financial or contractual obligations to the Bank. Credit risk arises in the Bank's direct lending operations, and in its funding, investment and trading activities where counterparties have repayment or other obligations to the Bank.

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Credit risk summary

- Loans and acceptances (Retail and Non-Retail) remained diversified by region, industry and customer. Regional exposure is spread across our key markets (Canada 64%, United States 7%, Chile 8%, Mexico 5% and Other 16%). Financial Services constitutes 5% of overall gross exposures (before consideration of collateral) and was $29 billion, an increase of $5 billion from October 31, 2017. These exposures are predominately to highly rated counterparties and are generally collateralized.
- The Bank's overall loan book as of October 31, 2018 increased to $573 billion versus $522 billion as of October 31, 2017, with growth reflected in Personal, and Business and Government lending. Residential mortgages were $253 billion as of October 31, 2018, with 84% in Canada. The corporate loan book, which accounts for 36% of the total loan book, is composed of 54% of loans with an investment grade rating as of October 31, 2018, unchanged from October 31, 2017.

The effective management of credit risk requires the establishment of an appropriate credit risk culture. Key credit risk policies and appetite statements are important elements used to create this culture.

The Board of Directors, either directly or through the Risk Committee (the Board), reviews and approves the Bank's Credit Risk Appetite limits annually and Credit Risk Policy limits biennially.

- The objectives of the Credit Risk Appetite are to ensure that:
  - target markets and product offerings are well defined at both the enterprise-wide and business line levels;
  - the risk parameters for new underwritings and for the portfolios as a whole are clearly specified; and
  - transactions, including origination, syndication, loan sales and hedging, are managed in a manner that is consistent with the Bank's risk appetite.
- The Credit Risk Policy articulates the credit risk management framework, including:
  - key credit risk management principles;
  - delegation of authority;
  - the credit risk management program;
  - counterparty credit risk management for trading and investment activities; and
  - aggregate limits, beyond which credit applications must be escalated to the Board for approval.

GRM develops the credit risk management framework and policies that detail, among other things, the credit risk rating systems and associated parameter estimates; the delegation of authority for granting credit; the calculation of the allowance for credit losses; and the authorization of write-offs.

Corporate and commercial credit exposures are segmented by country and by major industry group. Aggregate credit risk limits for each of these segments are also reviewed and approved annually by the Board. Portfolio management objectives and risk diversification are key factors in setting these limits.

Consistent with the Board-approved limits, borrower limits are set within the context of established lending criteria and guidelines for individual borrowers, particular industries, countries and certain types of lending, to ensure the Bank does not have excessive concentration in any single borrower, or related group of borrowers, particular industry sector or geographic region. Through the portfolio management process, loans may be syndicated to reduce overall exposure to a single name. For certain segments of the portfolio, credit derivative contracts are also used to mitigate the risk of loss due to borrower default. Risk is also mitigated through the selective sale of loans.

Banking units and GRM regularly review the various segments of the credit portfolio on an enterprise-wide basis to assess the impact of economic trends or specific events on the performance of the portfolio, and to determine whether corrective action is required. These reviews include the examination of the risk factors for particular products, industries and countries. The results of these reviews are reported to the Risk Policy Committee and, when significant, to the Board.

Risk measures

The credit risk rating systems support the determination of key credit risk parameter estimates which measure credit and transaction risk. These risk parameters – probability of default, loss given default and exposure at default are transparent and may be replicated in order to provide accuracy and consistency of credit adjudication, as well as minimum lending standards for each of the risk rating categories. The parameters are an integral part of enterprise-wide policies and procedures encompassing governance, risk management, and control structure, and are used in various internal and regulatory credit risk quantification calculations.

The Bank's credit risk rating system is subject to a rigorous validation, governance and oversight framework. The objectives of this framework are to ensure that:

- Credit risk rating methodologies and parameters are appropriately designed and developed, independently validated, and regularly reviewed; and
- The review and validation processes represent an effective challenge to the design and development process.

Non-retail credit risk rating methodologies and parameters are reviewed and validated at least annually. Units within GRM are responsible for design and development, validation and review, and are functionally independent from the business units responsible for originating transactions. Within GRM, they are also independent from the units involved in risk rating approval and credit adjudication.

Internal credit risk ratings and associated risk parameters affect lending decisions, loan pricing, computation of the collective allowance for credit losses, and return on equity.

Corporate and commercial

Corporate and commercial credit exposure arises in Canadian Banking, International Banking and Global Banking and Markets business lines.

Risk ratings

The Bank's risk rating system utilizes internal grade (IG) ratings – an 18 point scale used to differentiate the risk of default of borrowers, and the risk of loss on facilities. The general relationship between the Bank's internal IG ratings and external agency ratings is shown in T29.

IG ratings are also used to define credit adjudication authority levels appropriate to the size and risk of each credit application. Lower-rated credits require increasingly more senior management involvement depending upon the aggregate exposure. Where the decision is beyond

their authority levels, credit units will refer the request – with its recommendation – to a senior credit committee for adjudication. In certain cases, these must be referred to the Risk Committee of the Board of Directors.

Adjudication
Credit adjudication units within GRM analyze and evaluate all significant credit requests for corporate and commercial credit exposures, to ensure that risks are adequately assessed, properly approved, continually monitored and actively managed. The decision-making process begins with an assessment of the credit risk of the individual borrower or counterparty. Key factors considered in the assessment include:

- The borrower's management;
- The borrower's current and projected financial results and credit statistics;
- The industry in which the borrower operates;
- Economic trends; and
- Geopolitical risk.

Based on this assessment, a risk rating is assigned to the individual borrower or counterparty, using the Bank's risk rating systems.

A separate risk rating is also assigned at the facility level, taking into consideration additional factors, such as security, seniority of claim, structure, term and any other forms of credit risk mitigation that affect the amount of potential loss in the event of a default of the facility. Security typically takes the form of charges over inventory, receivables, real estate, and operating assets when lending to corporate and commercial borrowers; and cash or treasuries for trading lines such as securities lending, repurchase transactions, and derivatives. The types of acceptable collateral, and related valuation processes are documented in risk management policies and manuals.

Other forms of credit risk mitigation include third party guarantees and, in the case of derivatives facilities, master netting agreements.
Internal borrower and facility risk ratings are assigned when a facility is first authorized, and are promptly re-evaluated and adjusted, if necessary, as a result of changes to the customer's financial condition or business prospects. Re-evaluation is an ongoing process, and is done in the context of general economic changes, specific industry prospects, and event risks, such as revised financial projections, interim financial results and extraordinary announcements.

The internal credit risk ratings are also considered as part of the Bank's adjudication limits, as guidelines for hold levels are tied to different risk ratings. Single borrower limits are much lower for higher risk borrowers than low risk borrowers.

The credit adjudication process also uses a risk-adjusted return on equity profitability model to ensure that the client and transaction structure offers an appropriate return for a given level of risk. For the corporate portfolio, and the large borrowers in International, the Loan Portfolio Management Group reviews the profitability model results, together with external benchmarks, and provides an opinion on the relative return and pricing of each transaction above a minimum threshold.

Individual credit exposures are regularly monitored by both the business line units and GRM for any signs of deterioration. In addition, the business line units and GRM conduct a review and risk analysis of each borrower annually, or more frequently for higher-risk borrowers. If, in the judgement of management, an account requires the expertise of specialists in workouts and restructurings, it will be transferred to a special accounts group for monitoring and resolution.

Credit Risk Mitigation – Collateral/Security
Traditional Non-Retail Products (e.g. Operating lines of Credit, Term Loans)

Collateral values are accurately identified at the outset and throughout the tenure of a transaction by using standard evaluation methodologies. Collateral valuation estimates are conducted at a frequency that is appropriate to the frequency by which the market value fluctuates, using the collateral type and the borrower risk profile.

In addition, when it is not cost effective to monitor highly volatile collateral (e.g. accounts receivable, inventory), appropriate lending margins are applied to compensate (e.g. accounts receivable are capped at 80% of value, inventory at 50%). The frequency of collateral valuations is also increased when early warning signals of a borrower's deteriorating financial condition are identified.

Borrowers are required to confirm adherence to covenants including confirmation of collateral values on a periodic basis, which are used by the Bank to provide early warning signals of collateral value deterioration. Periodic inspections of physical collateral are performed where appropriate and where reasonable means of doing so are available.

Bank procedures require verification including certification by banking officers during initial, annual, and periodic reviews, that collateral values/margins/etc. have been assessed and, where necessary, steps have been taken to mitigate any decreased collateral values.

The Bank does not use automated valuation models (AVMs) for valuation purposes for traditional non-retail products. GRM performs its own valuations of companies based on various factors such as book value, discounted book value, enterprise value etc.

Commercial/Corporate Real Estate
New or updated appraisals are generally obtained at inception of a new facility, as well as during loan modifications, loan workouts and troubled debt restructure. The primary reason for requiring a new appraisal is if, in the reasonable opinion of the banking execution unit, or GRM, there has been a material change in value. Additionally, none of the appraisal guidelines contained within the policies should dissuade the Bank from requesting an appraisal more frequently if an adverse change in market conditions, sponsorship, credit worthiness, or other underwriting assumptions is realized or expected.

Appraisals must be in writing and must contain sufficient information and analysis to support the Bank's decision to make the loan. Moreover, in rendering an opinion of the property's market value, third party appraisers are responsible for establishing the scope of work necessary to develop

credible assignment results. The appraisal must meet the regulatory and industry requirements which, depending on the type of property being appraised, contain any or all of the following three approaches to value:

i. comparable sales approach
ii. replacement cost approach
iii. income approach

The appraiser must disclose the rationale for the omission of any valuation approach. Furthermore, the appraiser must disclose whether the subject property was physically inspected and whether anyone provided significant assistance to the person signing the appraisal report. The report must contain a presentation and explanation of the assumptions used in determining value under each of the above mentioned approaches.

Review of every appraisal is conducted by the banking units and GRM to confirm that the appraisal identifies all of the relevant issues for the specific asset class, location and economic environment and incorporates all appropriate valuation methodologies and assumptions. In most cases, the banking units also include comparable properties in addition to what is included in the appraisal to further justify value.

When third party assessors are used, they must be accredited and satisfactory to the Bank. In addition, GRM validates any third party valuations via internal desktop estimates either based on comparables or discounted income valuations.

Traded products

Traded products are transactions such as derivatives, foreign exchange, commodities, repurchase/reverse repurchase agreements, and securities lending/borrowing. Credit risks arising from traded products cannot be determined with certainty at the outset, because during the tenure of a transaction the dollar value of the counterparty's obligation to the Bank will be affected by changes in the capital markets (such as changes in stock prices, interest rates, and exchange rates). The Bank adjudicates credit exposures arising from transacting in traded products by considering their current fair value plus an additional component to reflect potential future changes in their mark-to-market value. The credit adjudication process also includes an evaluation of potential wrong-way risk, which arises when the exposure to a counterparty is positively correlated to the probability of default of that counterparty.

Credit risk associated with traded products is managed within the same credit adjudication process as the lending business. The Bank considers the credit risk arising from lending activities, as well as the potential credit risk arising from transacting in traded products with that counterparty.

Credit risk mitigation – collateral/security

Derivatives are generally transacted under industry standard International Swaps and Derivatives Association (ISDA) master netting agreements, which allow for a single net settlement of all transactions covered by that agreement in the event of a default or early termination of the transactions. ISDA agreements are frequently accompanied by an ISDA Credit Support Annex (CSA), the terms of which may vary according to each party's view of the other party's creditworthiness. CSAs can require one party or both parties to post initial margin at the onset of each transaction. CSAs also allow for variation margin to be called if total uncollateralized mark-to-market exposure exceeds an agreed upon threshold. Such variation margin provisions can be one-way (only one party will ever post collateral) or bilateral (either party may post depending upon which party is in-the-money). The CSA will also detail the types of collateral that are acceptable to each party, and the haircuts that will be applied against each collateral type. The terms of the ISDA master netting agreements and CSAs are taken into consideration in the calculation of counterparty credit risk exposure.

For derivative transactions, investment grade counterparties account for approximately 91% of the credit risk. Approximately 24% of the Bank's derivative counterparty exposures are to bank counterparties. After taking into consideration, where applicable, netting and collateral arrangements, no net credit risk amount arising from traded products transactions with any single counterparty was considered material to the financial position of the Bank as at October 31, 2018. No individual exposure to an investment grade bilateral counterparty exceeded $1,877 million and no individual exposure to a corporate counterparty exceeded $516 million.

Retail

Retail credit exposures arise in the Canadian Banking and International Banking business lines.

Adjudication

The decision-making process for retail loans ensures that credit risks are adequately assessed, properly approved, continually monitored and actively managed. Generally, credit decisions on consumer loans are processed by proprietary adjudication software and are based on risk ratings, which are generated using predictive credit scoring models.

The Bank's credit adjudication and portfolio management methodologies are designed to ensure consistent underwriting and early identification of problem loans. The Bank's rigorous credit underwriting and retail risk modeling methodologies are more customer focused than product focused. The Bank's view is that a customer-centric approach provides better risk assessment than product-based approaches, and should result in lower loan losses over time.

All credit scoring and policy changes are initiated by units within GRM that are functionally independent from the business units responsible for retail portfolios. Risk models and parameters are also subject to independent validation and review from the units involved in the design and development of models. The review process includes referral to the appropriate Senior Credit Committee for approval, where required. Consumer credit portfolios are reviewed monthly to identify emerging trends in loan quality and to assess whether corrective action is required.

Risk ratings

The Bank's consumer risk rating systems are oriented to borrower or transaction risk. Each retail exposure is assigned a risk grade based on the customer's credit history and/or internal credit score. The Bank's automated risk rating systems assess the ongoing credit-worthiness of individual customers on a monthly basis. This process provides for meaningful and timely identification and management of problem loans.

The risk rating system under the AIRB approach is subject to regular review and ongoing performance monitoring of key components. Risk model validations are conducted independently from the areas responsible for rating system development and implementation, to ensure effective independence in design and performance review.

Customer behavior characteristics which are used as inputs within the Bank's Basel III AIRB models are consistent with those used by the Bank's Canadian consumer risk rating systems. The International portfolios are subject to the Standardized approach at this time.

Credit risk mitigation – collateral/security

The property values for residential real estate secured exposures are confirmed at origination through a variety of validation methodologies, including AVM and full appraisal's (in-person inspection). The appraisal is completed by a third party, Bank approved appraiser. For monitoring of material portfolios, property values are indexed quarterly to house prices. For loan impairment within material portfolios, residential property values are re-confirmed using third party AVM's.

Where AVM values are used, these AVM values are subject to routine validation through a continuous random sampling process that back-tests AVM values against available property appraisals (primarily third party AVMs). Where third party appraisals are obtained, the Bank relies on the professional industry accreditation of the appraiser. Samples of approved appraisal reports are reviewed by the Bank's senior appraisers to ensure consistent appraisal quality and satisfactory appraisal values. The third party appraisers are selected from a pre-approved list of Bank-vetted appraisers.

Credit quality

T39 Impaired loans by business line (1)

	IFRS 9			IAS 39		
	2018			2017		
As at October 31 ($ millions)	Gross impaired loans	Allowance for credit losses	Net impaired loans	Gross impaired loans	Allowance for credit losses	Net impaired loans
Canadian Banking						
Retail	$ 840	$ 276	$ 564	$ 882	$ 645	$ 237
Commercial	158	104	54	174	134(2)	40
	$ 998	$ 380	$ 618	$ 1,056	$ 779	$ 277
International Banking						
Caribbean and Central America	$ 1,389	$ 326	$ 1,063	$ 1,221	$ 461	$ 760
Latin America						
Mexico	359	164	195	303	219	84
Peru	581	317	264	704	402	302
Chile	753	158	595	565	245	320
Colombia	619	159	460	462	261	201
Other Latin America	148	98	50	182	142	40
Total Latin America	2,460	896	1,564	2,216	1,269	947
	$ 3,849	$ 1,222	$ 2,627	$ 3,437	$ 1,730	$ 1,707
Global Banking and Markets						
Canada	$ 1	$ 1	$ –	$ 1	$ 1	$ –
U.S.	80	25	55	132	39	93
Asia and Europe	202	49	153	239	73	166
	$ 283	$ 75	$ 208	$ 372	$ 113	$ 259
Totals	$ 5,130	$ 1,677	$ 3,453	$ 4,865	$ 2,622	$ 2,243
Allowance for credit losses against performing loans		3,388			1,446	

Impaired loan metrics

	Net impaired loans	
As at October 31 ($ millions)	2018	2017(1)
Net impaired loans as a % of loans and acceptances	0.60%	0.43%
Allowance against impaired loans as a % of gross impaired loans	33%	54%

(1) Excludesloans acquired under the Federal Deposit Insurance Corporation (FDIC) guarantee related to the acquisition ofR-G Premier Bank of Puerto Rico, prior to 2018.
(2) Aportion of the existing allowance for credit losses on impaired loans as at October 31, 2017 was reclassified to performing loans with the adoption of IFRS 9 effective November 1, 2017, to conform with current period presentation.

Impaired loans

Gross impaired loans increased to $5,130 million as at October 31, 2018, from $4,865 million last year (excluding $62 million related to loans purchased under FDIC guarantee related to the acquisition of R-G Premier Bank of Puerto Rico), due primarily to purchased credit-impaired loans resulting from acquisitions.

Impaired loans in Canadian Banking decreased by $58 million, primarily in the retail portfolio.

In International Banking, impaired loans increased by $412 million, due primarily to purchased credit-impaired loans resulting from acquisitions and increases in the Caribbean and Central America region, Mexico, Colombia partially offset by decreases in Peru and Other Latin America.

Impaired loans in Global Banking and Markets decreased by $89 million, due primarily to resolutions during the year.

Net impaired loans, after deducting the allowance for credit losses, were $3,453 million as at October 31, 2018, an increase of $1,210 million from a year ago. Net impaired loans as a percentage of loans and acceptances were 0.60% as at October 31, 2018, an increase of 17 basis points from 0.43% a year ago.

Allowance for credit losses

The total allowance for credit losses was up $997 million to $5,065 million as at October 31, 2018 from $4,068 million last year (excluding $259 million related to loans acquired under FDIC guarantee related to the acquisition of R-G Premier Bank of Puerto Rico), due primarily to the impact of the implementation of IFRS 9 and impact of Day 1 provision for credit losses on acquired performing loans.

Allowance for credit losses on impaired loans in Canadian Banking decreased by $399 million to $380 million, due primarily to the impact of the implementation of IFRS 9.

In International Banking, allowance for credit losses on impaired loans decreased by $508 million to $1,222 million, due primarily to the impact of the implementation of IFRS 9.

Global Banking and Markets' allowances for Impaired Loans decreased by $38 million to $75 million, due mainly to resolutions during the year.

Allowance for credit losses on performing loans have increased to $3,388 million compared to $1,446 million as at Oct 31, 2017 due primarily to the impact of the implementation of IFRS 9 and impact of Day 1 provision for credit losses on acquired performing loans.

Portfolio review

Canadian Banking

Gross impaired loans in the retail portfolio decreased by $42 million or 5%. Total provision for credit losses in the retail portfolio was $746 million, down $111 million or 15% from last year.

In the commercial loan portfolio, gross impaired loans decreased by $16 million to $158 million. The provision for credit losses was $48 million, down $8 million or 14% from last year.

International Banking

In retail, gross impaired loans decreased by $147 million to $2,026 million, with a decrease attributable mainly due to the impact of the implementation of IFRS 9, which was partially offset by increases due to acquisitions. The total provision for credit losses in the retail portfolio increased to $1,667 million from $1,090 million last year, primarily due to one-time provisions related to acquisitions and the impact of acquisition related benefits in the prior year.

In commercial banking, gross impaired loans were $1,823 million, an increase of $559 million over the prior year, due primarily to the impact of the implementation of IFRS 9, and purchased credit-impaired loans resulting from acquisitions. The total provision for credit losses in the commercial portfolio was $200 million compared with $204 million last year, down $4 million or 2%.

Global Banking and Markets

Gross impaired loans in Global Banking and Markets decreased by $89 million to $283 million, due primarily to resolutions during the year partially offset by the impact of the implementation of IFRS 9. The total provision for credit losses was a net reversal of $50 million compared with $42 million last year.

Risk diversification

The Bank's exposure to various countries and types of borrowers are well diversified (see T59 and T63). Chart C24 shows loans and acceptances by geography. Ontario represents the largest Canadian exposure at 32% of the total. Latin America was 20% of the total exposure and the U.S. was 7%.

Chart C25 shows loans and acceptances by type of borrower (see T63). Excluding loans to households, the largest industry exposures were real estate and construction (5.1%), financial services (5.1% including banks and non-banks), wholesale and retail (4.4%), and energy (2.6%).

Risk mitigation

To mitigate exposures in its performing corporate portfolios, the Bank uses diversification by company, industry, and country, with loan sales and credit derivatives used sparingly. In 2018, loan sales totaled $25 million, compared to $242 million in 2017. The largest volume of loan sales in 2018 related to loans in the metals industry. As at October 31, 2018, credit derivatives used to mitigate exposures in the portfolios totaled $13 million (notional amount), compared to $23 million as at October 31, 2017.

The Bank actively monitors industry and country concentrations. As is the case with all industry exposures, the Bank continues to closely follow developing trends and takes additional steps to mitigate risk as warranted. Energy, mining, and shipping portfolios are being closely managed.

Overview of loan portfolio

The Bank has a well-diversified portfolio by product, business and geography. Details of certain portfolios of current focus are highlighted below.

Climate Change Risks

In February 2018, Scotiabank announced its support of the Financial Stability Board (FSB) Task Force on Climate-related Financial Disclosures (TCFD). This particular disclosure relates to the Bank's non-retail loan book. Additional disclosures relating to the non-retail loan book as well as other aspects of the Bank's operations will be included in the 2018 Corporate Social Responsibility Report.

Governance

Board Oversight

Climate Change risk and related disclosure is reviewed and discussed at several committees within the Board, including the Risk Committee and Audit and Conduct Review Committee, as well as by the full Board of Directors.

The Risk Committee, however, retains primary oversight responsibility for climate change related risks and opportunities with respect to the Bank's loan portfolio. As part of this responsibility, in 2018 the Risk Committee reviewed a Future of Energy report as part of its industry analyses and review of climate change risks. The Risk Committee advises the Board on key and emerging risks and related policies (e.g., Environmental Policy and Credit Risk Appetite) and reviews the Bank's management of key risks such as climate change. Reporting on such risks and opportunities is provided to

the Risk Committee via the Emerging Risks section of the quarterly Enterprise Risk Management Report (when appropriate), as well as review and approval of industry reports and individual credit submissions. Any significant climate-related natural disasters affecting the Bank's loan book would also be discussed at Risk Committee.

The Corporate Governance Committee is also engaged, as it acts in an advisory capacity to the Board through a continuing assessment of the Bank's approach to corporate governance and makes policy recommendations. Amongst its responsibilities, this Committee reviews the Bank's corporate social responsibility strategy and reporting. This includes climate change, as one of the Bank's corporate social responsibility priorities.

Management's Role

The Bank's existing Environmental Policy and Credit Risk Policy are the two main policy tools for identifying and managing climate related risks associated with the Bank's non-retail lending portfolio. These risks are identified, assessed and managed through the Bank's credit risk and environmental risk due diligence and adjudication processes. In 2018, the Bank continued its work on enhancing its climate change due diligence as part of the overall environmental risk due diligence process.

Specific and emerging risks and issues are raised to the relevant levels of management and/or risk committees for discussion or resolution and when deemed appropriate are reported quarterly in the Emerging Risk section of the Enterprise Risk Management Report to the Risk Committee of the Board.

The day-to-day responsibility for managing and reporting on climate change risk rests within Global Risk Management and its dedicated Environmental and Social Risk (ESR) team. The ESR team has responsibility for the integration of climate change considerations into individual credit applications and industry reviews, through the development and implementation of climate-related risk policies, procedures, tools and the provision of training to banking officers and credit adjudicators. The team also assists with the review of transactions to ensure climate-related risks are appropriately identified, considered and mitigated.

Strategy

Full integration of climate change considerations into Bank-wide processes will be a multi-year journey, with some aspects taking longer than others. In 2018, work began to develop a deeper understanding of climate-related risks by enhancing the Bank's due diligence processes and integrating climate risk considerations into its industry reviews. With respect to the former, enhanced due diligence processes will lead to application of a climate change risk-rating on individual accounts, followed by application of climate change scenario analyses.

Risk Management

The Bank considers environmental risk (including climate-related risks) as a principal risk type. Climate-related risk refers to the possibility that climate change issues associated with Scotiabank or its customers could give rise to credit, reputational, operational or legal risk, and ultimately affect Bank performance.

For over a decade, the Bank has utilized and refined a comprehensive environmental risk due diligence process. It is using its existing expertise in environmental risk management to build strong climate change risk due diligence processes that are repeatable, systematic and specific. The Bank is working to build the processes and the controls to generate meaningful and practical outcomes, and develop metrics that will allow the Bank to identify, manage and report climate change related risks.

During 2018 the Bank undertook a significant amount of work related to climate risk in the loan book. Highlights include:

a) The existing environmental risk framework and tools were expanded to better identify climate related risks (both physical and transition risks) for non-retail lending.

b) A module on climate change risk was incorporated into the mandatory environmental risk training course for all non-retail banking officers and credit adjudicators.

c) Policies and procedures for non-retail lending have been updated to include climate related due diligence questions. When relevant, climate change risks are to be addressed in all new and annual review credit applications.

d) A detailed climate change risks and opportunities section was added to industry reviews for 28 economic sectors.

e) Work has been initiated to use global positioning systems to better understand and assess the climate-related physical risks that may be incurred by the Bank's clients based upon their geographic location.

Metrics and Targets

Enhanced due diligence standards will allow the Bank to identify meaningful risk metrics. To that end, the Bank has engaged with a number of itsnon-retail clients to better understand their climate related risks; how they are being identified, mitigated, and reported; and the types of data that will be available.

The Bank is also working with its Canadian peers to develop common industry standards for risk metrics, which will facilitate future disclosures.

Once these risk metrics have been implemented, opportunities will exist to set meaningful targets.

Real estate secured lending

A large portion of the Bank's lending portfolio is comprised of residential mortgages and consumer loans, which are well diversified by borrower. As at October 31, 2018, these loans accounted for $366 billion or 64% of the Bank's total loans and acceptances outstanding (October 31, 2017 – $340 billion or 65%). Of these, $274 billion or 75% are real estate secured loans (October 31, 2017 – $257 billion or 76%). The tables below provide more details by portfolios.

Insured and uninsured residential mortgages and home equity lines of credit

The following table presents amounts of insured and uninsured residential mortgages and home equity lines of credit (HELOCs), by geographic area.

T40 Insured and uninsured residential mortgages and home equity lines of credit (HELOCs), by geographic areas

	2018											
	Residential mortgages						Home equity lines of credit					
As at October 31	Insured(1)		Uninsured		Total		Insured(1)		Uninsured		Total	
($ millions)	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Canada:(2)												
Atlantic provinces	$ 6,060	2.8	$ 5,309	2.5	$ 11,369	5.3	$ –	–	$ 1,175	5.6	$ 1,175	5.6
Quebec	7,658	3.6	8,223	3.9	15,881	7.5	–	–	984	4.7	984	4.7
Ontario	41,351	19.4	65,660	30.8	107,011	50.2	–	–	11,086	53.0	11,086	53.0
Manitoba & Saskatchewan	5,473	2.6	3,992	1.9	9,465	4.5	1	–	795	3.8	796	3.8
Alberta	18,117	8.5	12,638	5.9	30,755	14.4	1	–	3,020	14.4	3,021	14.4
British Columbia & Territories	13,526	6.4	25,076	11.7	38,602	18.1	–	–	3,866	18.5	3,866	18.5
Canada(3)	$ 92,185	43.3%	$120,898	56.7%	$213,083	100%	$ 2	–%	$ 20,926	100%	$ 20,928	100%
International	–	–	40,274	100	40,274	100	–	–	–	–	–	–
Total	$ 92,185	36.4%	$161,172	63.6%	$253,357	100%	$ 2	–%	$ 20,926	100%	$ 20,928	100%
	2017											
Canada(3)	$100,921	49.0%	$104,872	51.0%	$205,793	100%	$ 4	–%	$ 20,148	100%	$ 20,152	100%
International	–	–	31,123	100	31,123	–	–	–	–	–	–	–
Total	$100,921	42.6%	$135,995	57.4%	$236,916	100%	$ 4	–%	$ 20,148	100%	$ 20,152	100%

(1) Default insurance is contractual coverage for the life of eligible facilities whereby the Bank's exposure to real estate secured lending is protected against potential shortfalls caused by borrower default. This insurance is provided by either government-backed entities or private mortgage insurers.
(2) The province represents the location of the property in Canada.
(3) Includes multi-residential dwellings (4+ units) of $2,899 (October 31, 2017 – $2,594) of which $2,029 are insured (October 31, 2017 – $1,689).

Amortization period ranges for residential mortgages

The following table presents the distribution of residential mortgages by remaining amortization periods, and by geographic areas.

T41 Distribution of residential mortgages by remaining amortization periods, and by geographic areas

	2018					
	Residential mortgages by remaining amortization periods					
As at October 31	Less than 20 years	20-24 years	25-29 years	30-34 years	35 years and greater	Total residential mortgage
Canada	33.9%	38.0%	27.1%	0.9%	0.1%	100%
International	65.1%	18.9%	13.2%	2.7%	0.1%	100%
	2017					
Canada	33.8%	37.9%	26.9%	1.3%	0.1%	100%
International	69.3%	17.2%	11.1%	2.3%	0.1%	100%

Loan to value ratios

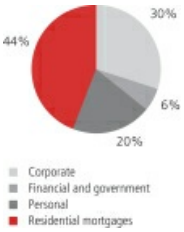
The Canadian residential mortgage portfolio is 57% uninsured (October 31, 2017 – 51%). The average loan-to-value (LTV) ratio of the uninsured portfolio is 54% (October 31, 2017 – 51%).

The following table presents the weighted average LTV ratio for total newly originated uninsured residential mortgages and home equity lines of credit during the year, which include mortgages for purchases, refinances with a request for additional funds and transfers from other financial institutions, by geographic areas.

C24 Well diversified in Canada and internationally... loans and acceptances, October 2018



C25 … and in household and business lending loans and acceptances, October 2018



T42 Loan to value ratios

	Uninsured LTV ratios(1)	
	For the year ended October 31, 2018	
	Residential mortgages LTV%	Home equity lines of credit(2) LTV%
Canada:		
Atlantic provinces	**69.4%**	**57.3%**
Quebec	**65.4**	**67.5**
Ontario	**63.4**	**61.4**
Manitoba & Saskatchewan	**68.6**	**61.0**
Alberta	**67.3**	**70.5**
British Columbia & Territories	**61.6**	**59.9**
Canada	**63.8%**	**62.0%**
International	**68.9%**	**n/a**
	For the year ended October 31, 2017	
Canada	64.0%	62.7%
International	70.4%	n/a

(1) The province represents the location of the property in Canada.
(2) Includes only home equity lines of credit (HELOC) under Scotia Total Equity Plan. LTV is calculated based on the sum of residential mortgages and the authorized limit for related HELOCs, divided by the value of the related residential property, and presented on a weighted average basis for newly originated mortgages and HELOCs.

Potential impact on residential mortgages and real estate home equity lines of credit in the event of an economic downturn
The Bank stresses its mortgage book to determine the impact of a variety of combinations of home price declines, unemployment increases and rising interest rates. It benchmarks the scenarios against experience in various historical downturns to confirm that they are sufficiently robust tests of the portfolio. In stress, there are moderate increases in credit losses and negative impacts on capital ratios but within a level the Bank considers manageable. In practice, the portfolio is robust to such scenarios due to the low LTV of the book, the high proportion of insured exposures and the diversified composition of the portfolio.

Loans to Canadian condominium developers

With respect to loans to Canadian condominium developers, the Bank had loans outstanding of $1,192 million as at October 31, 2018 (October 31, 2017 – $949 million). This is a high quality portfolio with well-known developers who have long-term relationships with the Bank.

European exposures

The Bank believes that its European exposures are manageable, are sized appropriately relative to the credit worthiness of the counterparties (89% of the exposures are to investment grade counterparties based on a combination of internal and external ratings), and are modest relative to the capital levels of the Bank. The Bank's European exposures are certified at amortized cost or fair value using observable inputs, with negligible amounts valued using models with unobservable inputs (Level 3). There were no significant events in the quarter that have materially impacted the Bank's exposures.

The Bank's exposure to sovereigns was $8.5 billion as at October 31, 2018 (October 31, 2017– $8.9 billion), $5.8 billion to banks (October 31, 2017 – $5.7 billion) and $15.8 billion to corporates (October 31, 2017– $17.6 billion).

In addition to exposures detailed in the table below, the Bank had indirect exposures consisting of securities exposures to non-European entities whose parent company is domiciled in Europe of $0.7 billion as at (October 31, 2017 – $1.3 billion).
The Bank's current European exposure is distributed as follows:

T43 Bank's exposure distribution by country

As at October 31	2018							2017
($ millions)	Loans and loan equivalents(1)	Deposits with financial institutions	Securities(2)	SFT and derivatives(3)	Funded Total	Undrawn Commitments(4)	Total	Total
Greece	**$ 146**	**$ –**	**$ –**	**$ –**	**$ 146**	**$ –**	**$ 146**	$ 213
Ireland	**1,003**	**482**	**19**	**5**	**1,509**	**1,103**	**2,612**	2,033
Italy	**31**	**–**	**(2)**	**1**	**30**	**118**	**148**	133
Portugal	**–**	**–**	**–**	**2**	**2**	**–**	**2**	1
Spain	**944**	**7**	**553**	**50**	**1,554**	**147**	**1,701**	826
Total GIIPS	**$ 2,124**	**$ 489**	**$ 570**	**$ 58**	**$ 3,241**	**$ 1,368**	**$ 4,609**	$ 3,206
U.K.	**$ 7,633**	**$ 4,317**	**$ 1,150**	**$ 1,293**	**$ 14,393**	**$ 5,610**	**$ 20,003**	$ 20,166
Germany	**1,475**	**651**	**1,115**	**21**	**3,262**	**1,023**	**4,285**	4,495
France	**1,136**	**289**	**1,411**	**49**	**2,885**	**1,314**	**4,199**	5,053
Netherlands	**855**	**181**	**(142)**	**95**	**989**	**1,536**	**2,525**	3,341
Switzerland	**535**	**14**	**85**	**87**	**721**	**771**	**1,492**	2,156
Other	**1,926**	**255**	**2,175**	**236**	**4,592**	**3,396**	**7,988**	8,068
Total Non-GIIPS	**$ 13,560**	**$ 5,707**	**$ 5,794**	**$ 1,781**	**$ 26,842**	**$ 13,650**	**$ 40,492**	$ 43,279
Total Europe	**$ 15,684**	**$ 6,196**	**$ 6,364**	**$ 1,839**	**$ 30,083**	**$ 15,018**	**$ 45,101**	$ 46,485
As at October 31, 2017	$ 17,652	$ 2,841	$ 9,005	$ 2,718	$ 32,216	$ 14,269	$ 46,485	

(1) Individual allowances for credit losses are $28. Letters of credit and guarantees are included as funded exposure as they have been issued. Included in loans and loans equivalent are letters of credit and guarantees which total $3,867 as at October 31, 2018 (October 31, 2017 – $3,366).
(2) Exposures for securities are calculated taking into account derivative positions where the security is the underlying reference asset and short trading positions, with net short positions in brackets.
(3) SFT comprise of securities purchased under resale agreements, obligations related to securities sold under repurchase agreements and securities lending and borrowing transactions. Gross and net funded exposures represent all net positive positions after taking into account collateral. Collateral held against derivatives was $1,899 and collateral held against SFT was $9,989.
(4) Undrawn commitments represent an estimate of the contractual amount that may be drawn upon by the obligor and include commitments to issue letters of credit on behalf of other banks in a syndicated bank lending arrangement.

Market Risk

Market risk is the risk of loss from changes in market prices and rates (including interest rates, credit spreads, equity prices, foreign exchange rates and commodity prices), the correlations between them, and their levels of volatility. Below is an index of market risk disclosures:

Index of all market risk disclosures

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Market risk factors

Interest rate risk

The risk of loss due to changes in the level and/or the volatility of interest rates. This risk affects instruments such as, but not limited to, debt securities, loans, mortgages, deposits and derivatives.

Interest rate risks are managed through sensitivity, gap, stress testing, annual income and VaR limits and mitigated through portfolio diversification and hedges using interest rate derivatives and debt securities.

Credit spread risk

The risk of loss due to changes in the market price and volatility of credit, or the creditworthiness of issuers. This risk is mainly concentrated in loan and debt securities portfolios. Risk is managed through sensitivity, jump-to-default, stress testing and VaR limits and mitigated through hedges using credit derivatives.

Foreign currency risk

The risk of loss resulting from changes in currency exchange rates and exchange rate volatility. Foreign currency denominated debt and other securities as well as future cash flows in foreign currencies are exposed to this type of risk. Risk is managed through maximum net trading position, sensitivity, stress testing and VaR limits and mitigated through hedges using foreign exchange positions or derivatives.

Equity risk

The risk of loss due to changes in prices, volatility or any other equity related risk factor of individual equity or equity linked securities. This risk affects instruments such as, but not limited to, equities, exchange traded funds, mutual funds, derivatives and other equity linked products. Risk is managed through sensitivity, stress testing and VaR limits and mitigated through hedges using physical equity and derivatives instruments.

Commodity risk

The risk of loss due to changes in prices or volatility of precious metal, base metal, energy and agriculture products. Both physical commodity and derivatives positions are exposed to this risk. Risk is managed through aggregate and net trading position, sensitivity, stress testing and VaR limits and mitigated through hedges using physical commodity and derivative positions.

The following maps risk factors to trading and non-trading activities:

Non-trading Funding	**Investments**	**Trading**
Interest rate risk	Interest rate risk	Interest rate risk
Foreign currency risk	Credit spread risk	Credit spread risk
	Foreign currency risk	Foreign currency risk
	Equity risk	Equity risk
		Commodity risk

Market risk governance

Overview

The Board of Directors reviews and approves market risk policies and limits annually. The Bank's Asset-Liability Committee (ALCO) and Market Risk Management and Policy Committee (MRMPC) oversee the application of the framework set by the Board, and monitor the Bank's market risk exposures and the activities that give rise to these exposures. The MRMPC establishes specific operating policies and sets limits at the product, portfolio, business unit and business line levels, and for the Bank in total. Limits are reviewed at least annually.

Global Risk Management provides independent oversight of all significant market risks, supporting the MRMPC and ALCO with analysis, risk measurement, monitoring, reporting, proposals for standards and support for new product development. To ensure compliance with policies and limits, market risk exposures are independently monitored on a continuing basis, either by Global Risk Management, the back offices, or Finance. They provide senior management, business units, the ALCO, and the MRMPC with a series of daily, weekly and monthly reports of market risk exposures by business line and risk type.

The Bank uses a variety of metrics and models to measure and control market risk exposures. These measurements are selected based on an assessment of the nature of risks in a particular activity. The principal measurement techniques are Value at Risk (VaR), Incremental Risk Charge, stress testing, sensitivity analysis and gap analysis. The use and attributes of each of these techniques are noted in the Risk Measurement Summary.

Risk measurement summary

Value at risk (VaR)

VaR is a statistical method of measuring potential loss due to market risk based upon a common confidence interval and time horizon. The Bank calculates VaR daily using a 99% confidence level, and a one-day holding period for its trading portfolios. This means that once in every 100 days, the trading positions are expected to lose more than the VaR estimate. VaR has two components: general market risk and debt specific risk. The Bank calculates general market risk VaR using historical simulation based on 300 days of market data. Obligor specific risk on debt instruments and credit derivatives not captured in general market risk VaR is calculated through the debt specific risk VaR, which uses historical resampling. In addition, the Bank calculates a Stressed VaR measure which follows the same basic methodology as VaR but is calibrated to a one year stressed period. The stressed period is determined based on analysis of the trading book's risk profile against historical market data. Stressed VaR complements VaR in that it evaluates the impact of market volatility that is outside the VaR's historical set.

All material risk factors are captured in VaR. Where historical data is not available, proxies are used to establish the relevant volatility for VaR and Stressed VaR until sufficient data is available. Changes in VaR between reporting periods are generally due to changes in positions, volatilities and/or correlations between asset classes. VaR is also used to evaluate risks arising in certain funding and investment portfolios. Backtesting is also an important and necessary part of the VaR process. The Bank backtests the actual trading profit and loss against the VaR result to validate the quality and accuracy of the Bank's VaR model. The Board reviews VaR and backtesting results quarterly.

Incremental Risk Charge (IRC)
Basel market risk capital requirements includes IRC which captures the following:

Default risk: This is the potential for direct losses due to an obligor's (equity/bond issuer or counterparty) default.

Credit migration risk: This is the potential for direct losses due to a credit rating downgrade or upgrade.

A Monte Carlo model is used to perform default and migration simulations for the obligors underlying credit derivative and bond portfolios. IRC is calculated at the 99.9th percentile with a one year liquidity horizon. The Board reviews IRC results quarterly.

Stress testing
A limitation of VaR and Stressed VaR is that they only reflect the recent history of market volatility and a specific one year stressed period, respectively. To complement these measures, stress testing examines the impact that abnormally large changes in market factors and periods of prolonged inactivity might have on trading portfolios. Stress testing scenarios are designed to include large shifts in risk factors as well as historical and theoretical multi risk market events. Historical scenarios capture severe movements over periods that are significantly longer than the one-day holding period captured in VaR, such as the 2008 Credit Crisis or the 1998 Russian Financial Crisis. Similar to Stressed VaR, stress testing provides management with information on potential losses due to tail events. In addition, the results from the stress testing program are used to verify that the Bank's market risk capital is sufficient to absorb these potential losses.

The Bank subjects its trading portfolios to a series of daily, weekly and monthly stress tests. The Bank also evaluates risk in its investment portfolios monthly, using stress tests based on risk factor sensitivities and specific market events. The stress testing program is an essential component of the Bank's comprehensive risk management framework which complements the VaR methodology and other risk measures and controls employed by the Bank. The Board reviews stress testing results quarterly.

Sensitivity analysis
In trading portfolios, sensitivity analysis is used to measure the effect of changes in risk factors, including prices and volatility, on financial products and portfolios. These measures apply across product types and geographies and are used for limit monitoring and management reporting.

In non-trading portfolios, sensitivity analysis assesses the effect of changes in interest rates on current earnings and on the economic value of shareholders' equity. It is applied globally to each of the major currencies within the Bank's operations. The Bank's sensitivity analysis for limit and disclosure purposes is measured through positive and negative parallel shifts in the underlying interest rate curves. These calculations are based on a constant balance sheet and make no assumptions for management actions that may mitigate the risks. The Bank also performs sensitivity analysis using various non-parallel interest rate curve shifts, for example: curve steepeners, curve flatteners and curve twists.

Gap analysis
Gap analysis is used to assess the interest rate sensitivity of re-pricing mismatches in the Bank's non-trading operations. Under gap analysis, interest rate sensitive assets, liabilities and off-balance sheet instruments are assigned to defined time periods based on expected re-pricing dates. Products with a contractual maturity are assigned an interest rate gap term based on the shorter of the contractual maturity date and the next re-pricing date. Products with no contractual maturity are assigned an interest rate gap based on observed historical consumer behaviour.

Validation of market risk models
Prior to the implementation of new market risk models, rigorous validation and testing is conducted. Validation is conducted when the model is initially developed and when any significant changes are made to the model. The models are also subject to ongoing validation, the frequency of which is determined by model risk ratings. Models may also be triggered for earlier revalidation when there have been significant structural changes in the market or changes to the composition of the portfolio. Model validation includes backtesting, and additional analysis such as:

- Theoretical review or tests to demonstrate whether assumptions made within the internal model are appropriate; and
- Impact tests including stress testing that would occur under historical and hypothetical market conditions.

The validation process is governed by the Bank's Model Risk Management Policy.

Non-trading market risk

Funding and investment activities
Market risk arising from the Bank's funding and investment activities is identified, managed and controlled through the Bank's asset-liability management processes. The Asset-Liability Committee meets monthly to review risks and opportunities, and evaluate performance including the effectiveness of hedging strategies.

Interest rate risk
Interest rate risks in the non-trading portfolios are predominately driven by the interest rate mismatch (i.e. re-pricing frequency) in the asset and liability exposures. The largest exposures in the non-trading book arise from retail banking operations in Canada. The largest component of this risk is from positions related to the retail mortgage book. T44 shows a summary of the interest rate gaps for the Bank's non-trading positions.

Interest rate risk arising from the Bank's lending, funding and investment activities is managed in accordance with Board-approved policies and global limits, which are designed to control the risk to net interest income and economic value of shareholders' equity. The annual income limit measures the effect of a specified change in interest rates on the Bank's annual net interest income over the next twelve months, while the economic value limit measures the impact of a specified change in interest rates on the present value of the Bank's net assets. These limits are set according to the documented risk appetite of the Bank. Board-level limit utilization is reported to both the Asset-Liability Committee and the Board on a regular basis. Any limit exceptions are reported according to the Limit Monitoring and Compliance Policy of the Bank.

Net interest income and the economic value of equity result from the differences between yields earned on the Bank's non-trading assets and interest rate paid on its liabilities. The difference in yields partly reflects mismatch between the maturity and re-pricing characteristics of the assets and liabilities. This mismatch is inherent in the non-trading operations of the Bank and exposes it to adverse changes in the level of interest rates. The Asset-Liability Committee provides strategic direction for the management of structural interest rate risk within the risk appetite framework authorized by the Board of Directors. The asset/liability management strategy is executed by Group Treasury with the objective of protecting and enhancing net interest income within established risk tolerances.

Gap analysis, simulation modeling, sensitivity analysis and VaR are used to assess exposures and for limit monitoring and planning purposes. The Bank's interest rate risk exposure calculations are generally based on the earlier of contractual re-pricing or maturity of on-balance sheet and off-balance sheet assets and liabilities, although certain assets and liabilities such as credit cards and deposits without a fixed maturity are assigned a maturity profile based on the longevity of the exposure. Expected prepayments from loans and cashable investment products are also incorporated into the exposure calculations.

T45 shows the after-tax impact of an immediate and sustained 100 basis point shock over a one year period on annual income and economic value of shareholders' equity. The interest rate sensitivities tabulated are based on a static balance sheet. There are no assumptions made for management actions that may mitigate risk. Based on the Bank's interest rate positions at year-end 2018, an immediate and sustained 100 basis point increase in interest rates across all currencies and maturities would decrease after-tax net interest income by approximately $105 million over the next 12 months, assuming no further management actions. During fiscal 2018, this measure ranged between $53 million and $105 million.

This same increase in interest rates would result in an after-tax decrease in the present value of the Bank's net assets of approximately $870 million. During fiscal 2018, this measure ranged between $827 million and $1097 million. The directional sensitivity of these two key metrics is largely determined by the difference in time horizons (annual income captures the impact over the next twelve months only, whereas economic value considers the potential impact of interest rate changes on the present value of all future cash flows). The annual income and economic value results are compared to the authorized Board limits. There were no limit breaches in the reporting period.

T44 Interest rate gap

Interest rate sensitivity position(1) As at October 31, 2018 ($ billions)	Within 3 months	3 to 12 months	Over 1 year	Non-interest rate sensitive	Total
Canadian dollars					
Assets	$ 221.1	$ 50.3	$ 165.1	$ 9.3	**$445.8**
Liabilities	$ 264.0	$ 59.3	$ 107.0	$ 15.5	**$445.8**
Gap	$ (42.9)	$ (9.0)	$ 58.1	$ (6.2)	**$ –**
Foreign currencies					
Assets	$ 337.9	$ 42.1	$ 87.6	$ 85.1	**$552.7**
Liabilities	$ 332.4	$ 43.0	$ 69.4	$ 107.9	**$552.7**
Gap	$ 5.5	$ (0.9)	$ 18.2	$ (22.8)	**$ –**
Total					
Gap	$ (37.4)	$ (9.9)	$ 76.3	$ (29.0)	**$ –**
As at October 31, 2017					
Gap	$ (0.9)	$ 1.9	$ 28.8	$ (29.8)	**$ –**

(1) The above figures reflect the inclusion of off-balance sheet instruments, as well as an estimate of prepayments on consumer and mortgage loans and cashable GICs.

T45 Structural interest sensitivity

	2018		2017	
As at October 31 ($ millions)	Economic Value of Shareholders' Equity	Annual Income	Economic Value of Shareholders' Equity	Annual Income
After-tax impact of				
100bp increase in rates				
Non-trading risk	**$ (870)**	**$ (105)**	$ (354)	$ 64
100bp decrease in rates				
Non-trading risk	**$ 797**	**$ 101**	$ 183	$ (67)

Foreign currency risk

Foreign currency risk in the Bank's unhedged funding and investment activities arises primarily from the Bank's net investments in foreign operations as well as foreign currency earnings in its domestic and remitting foreign branch operations.

The Bank's foreign currency exposure to its net investments in foreign operations is controlled by a Board-approved limit. This limit considers factors such as potential volatility to shareholders' equity as well as the potential impact on capital ratios from foreign exchange fluctuations. On a quarterly basis, the Asset-Liability Committee reviews the Bank's foreign currency net investment exposures and determines the appropriate hedging strategies. These may include funding the investments in the same currency or using other financial instruments, including derivatives.

Foreign currency translation gains and losses from net investments in foreign operations, net of related hedging activities and tax effects, are recorded in accumulated other comprehensive income within shareholders' equity. However, the Bank's regulatory capital ratios are not materially affected by these foreign exchange fluctuations because the risk-weighted assets of the foreign operations tend to move in a similar direction.

The Bank is also subject to foreign currency translation risk on the earnings of its domestic and remitting foreign branch operations. The Bank forecasts foreign currency revenues and expenses, which are primarily denominated in U.S. dollars, over a number of future fiscal quarters. The Asset-Liability Committee also assesses economic data trends and forecasts to determine if some or all of the estimated future foreign currency revenues and expenses should be hedged. Hedging instruments normally include foreign currency spot and forward contracts, as well as foreign currency options and swaps. Certain of these economic hedges may not qualify for hedge accounting resulting in a potential for a mismatch in the timing of the recognition of economic hedge gains/losses and the underlying foreign earnings translation gains/losses. In accordance with IFRS, foreign currency translation gains and losses relating to monetary and non-monetary items are recorded directly in earnings.

As at October 31, 2018, a one percent increase (decrease) in the Canadian dollar against all currencies in which the Bank operates decreases (increases) the Bank's before-tax annual earnings by approximately $65 million (October 31, 2017 – $58 million) in the absence of hedging activity, primarily from the exposure to U.S. dollars.

Investment portfolio risks

The Bank holds investment portfolios to meet liquidity and statutory reserve requirements and for investment purposes. These portfolios expose the Bank to interest rate, foreign currency, credit spread and equity risks. Debt investments primarily consist of government, agency, and corporate bonds. Equity investments include common and preferred shares, as well as a diversified portfolio of third-party managed funds. The majority of these securities are valued using prices obtained from external sources. These portfolios are controlled by a Board-approved policy and limits.

Trading market risk

The Bank's policies, processes and controls for trading activities are designed to achieve a balance between pursuing profitable trading opportunities and managing earnings volatility within a framework of sound and prudent practices. Trading activities are primarily customer focused.

Market risk arising from the Bank's trading activities is managed in accordance with Board-approved policies, and aggregate VaR and stress testing limits. The quality of the Bank's VaR is validated by regular backtesting analysis, in which the VaR is compared to both theoretical profit and loss results based on fixed end of day positions and actual reported profit and loss. A VaR at the 99% confidence interval is an indication of a 1% probability that losses will exceed the VaR if positions remain unchanged during the next business day. Trading positions are however managed dynamically and, as a result, actual profit/loss backtesting exceptions are uncommon.

In fiscal 2018, the total one-day VaR for trading activities averaged $12.9 million, compared to $11.2 million in 2017.

T46 Market risk measures

	2018				2017			
($ millions)	Year end	Avg	High	Low	Year end	Avg	High	Low
Credit Spread plus Interest Rate	**$ 11.0**	**$ 11.6**	**$ 17.8**	**$ 6.9**	$ 10.1	$ 10.8	$ 15.1	$ 8.0
Credit Spread	**6.2**	**7.8**	**12.2**	**4.8**	6.9	6.3	9.1	4.1
Interest Rate	**7.7**	**9.5**	**17.2**	**4.3**	8.4	8.4	12.0	5.3
Equities	**5.8**	**3.0**	**15.5**	**1.2**	3.2	2.2	4.8	1.0
Foreign Exchange	**2.8**	**3.3**	**5.8**	**1.1**	2.9	2.2	5.5	0.7
Commodities	**1.7**	**1.6**	**2.1**	**1.0**	1.3	1.4	2.6	0.6
Debt Specific	**3.6**	**3.4**	**4.2**	**2.6**	3.3	3.6	5.1	2.4
Diversification Effect	**(11.7)**	**(10.0)**	**n/a**	**n/a**	(10.2)	(9.0)	n/a	n/a
All-Bank VaR	**$ 13.2**	**$ 12.9**	**$ 18.4**	**$ 8.6**	$ 10.6	$ 11.2	$ 14.9	$ 9.1
All-Bank Stressed VaR	**$ 44.6**	**$ 42.7**	**$ 59.0**	**$ 26.3**	$ 34.7	$ 28.5	$ 44.5	$ 19.2
Incremental Risk Charge	**$ 77.9**	**$ 173.4**	**$ 474.7**	**$ 60.0**	$ 144.5	$ 271.2	$ 399.8	$ 144.5

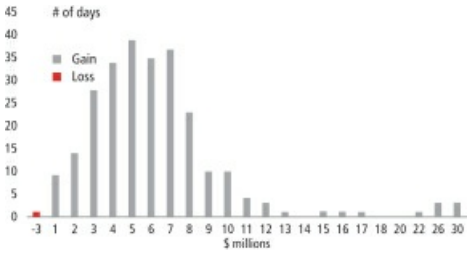
The Bank also calculates a Stressed VaR which uses the same basic methodology as the VaR. However, Stressed VaR is calculated using market volatility from a one-year time period identified as stressful, given the risk profile of the trading portfolio. The current period is the 2008/2009 credit crisis surrounding the collapse of Lehman Brothers. In fiscal 2018, the total one-day Stressed VaR for trading activities averaged $42.7 million compared to $28.5 million in 2017.

In fiscal 2018, the average IRC decreased to $173.4 million from $271.2 million in 2017, primarily driven by reduced emerging market exposure.

Description of trading revenue components and graphical comparison of VaR to daily P&L

Chart C26 shows the distribution of daily trading revenue for fiscal 2018 and Chart C27 compares that distribution to daily VaR results. Trading revenue includes changes in portfolio value as well as the impact of new trades, commissions, fees and reserves. Some components of revenue which are calculated less frequently are pro-rated. Trading revenue averaged $5.9 million per day, compared to $6.0 million in 2017. Revenue was positive on 99.6% of trading days during the year, an increase from 99% in 2017. During the year, the largest single day trading loss was $3.2 million which occurred on December 15, 2017, and was smaller than the total VaR of $13.8 million on the same day.

C26 Trading revenue distribution
Year ended October 31, 2018



C27 Daily trading revenue vs. VaR
$ millions, November 1, 2017 to October 31, 2018



Market risk linkage to Consolidated Statement of Financial Position

Trading assets and liabilities are marked to market daily and included in trading risk measures such as VaR. Derivatives risk related to Global Banking and Markets' activities is captured under trading risk measures while derivatives used in asset/liability management are in the non-trading risk category. A comparison of Consolidated Statement of Financial Position items which are covered under the trading and non-trading risk measures is provided in the table below.

T47 Market risk linkage to Consolidated Statement of Financial Position of the Bank

		Market Risk Measure			
As at October 31, 2018 ($ millions)	Consolidated Statement of Financial Position	Trading Risk	Non-trading risk	Not subject to market risk	Primary risk sensitivity of non-trading risk
Precious metals	**$ 3,191**	**$ 3,191**	**$ –**	**$ –**	**n/a**
Trading assets	**100,262**	**99,650**	**612**	**–**	**Interest rate, FX**
Financial instruments designated at fair value through profit or loss	**12**	**–**	**12**	**–**	**Interest rate**
Derivative financial instruments	**37,558**	**33,937**	**3,621**	**–**	**Interest rate, FX, equity**
Investment securities	**78,396**	**–**	**78,396**	**–**	**Interest rate, FX, equity**
Loans	**551,834**	**–**	**551,834**	**–**	**Interest rate, FX**
Assets not subject to market risk (1)	**227,240**	**–**	**–**	**227,240**	**n/a**
Total assets	**$ 998,493**	**$ 136,778**	**$ 634,475**	**$ 227,240**	
Deposits	**$ 676,534**	**$ –**	**$ 641,791**	**$ 34,743**	**Interest rate, FX, equity**
Financial instruments designated at fair value through profit or loss	**8,188**	**–**	**8,188**	**–**	**Interest rate, equity**
Obligations related to securities sold short	**32,087**	**32,087**	**–**	**–**	**n/a**
Derivative financial instruments	**37,967**	**32,300**	**5,667**	**–**	**Interest rate, FX, equity**
Trading liabilities(2)	**5,019**	**5,019**	**–**	**–**	**n/a**
Retirement and other benefit liabilities	**1,727**	**–**	**1,727**	**–**	**Interest rate, credit spread, equity**
Liabilities not subject to market risk (3)	**169,291**	**–**	**–**	**169,291**	**n/a**
Total liabilities	**$ 930,813**	**$ 69,406**	**$ 657,373**	**$ 204,034**	

(1) Includes goodwill, intangibles, other assets and securities purchased under resale agreements and securities borrowed.
(2) Gold and silver certificates and bullion included in other liabilities.
(3) Includes obligations related to securities sold under repurchase agreements and securities lent and other liabilities.

		Market Risk Measure			
As at October 31, 2017(1) ($ millions)	Consolidated Statement of Financial Position	Trading Risk	Non-trading risk	Not subject to market risk	Primary risk sensitivity of non-trading risk
Precious metals	$ 5,717	$ 5,717	$ –	$ –	n/a
Trading assets	98,464	98,464	–	–	n/a
Financial instruments designated at fair value through profit or loss	13	–	13	–	Interest rate
Derivative financial instruments	35,364	30,648	4,716	–	Interest rate, FX, equity
Investment securities	69,269	–	69,269	–	Interest rate, FX, equity
Loans	504,369	–	504,369	–	Interest rate, FX
Assets not subject to market risk (2)	202,077	–	–	202,077	n/a
Total assets	$ 915,273	$ 134,829	$ 578,367	$ 202,077	
Deposits	$ 625,367	$ –	$ 593,174	$ 32,193	Interest rate, FX, equity
Financial instruments designated at fair value through profit or loss	4,663	–	4,663	–	Interest rate, equity
Obligations related to securities sold short	30,766	30,766	–	–	n/a
Derivative financial instruments	34,200	30,545	3,655	–	Interest rate, FX, equity
Trading liabilities(3)	6,819	6,819	–	–	n/a
Retirement and other benefit liabilities	2,201	–	2,201	–	Interest rate, credit spread, equity
Liabilities not subject to market risk (4)	149,632	–	–	149,632	n/a
Total liabilities	$ 853,648	$ 68,130	$ 603,693	$ 181,825	

(1) Amounts have not been restated in accordance with IFRS 9; prior period amounts are prepared in accordance with IAS 39 (refer to Notes 3 and 4 in the consolidated financial statements).
(2) Includes goodwill, intangibles, other assets and securities purchased under resale agreements and securities borrowed.
(3) Gold and silver certificates and bullion included in other liabilities.
(4) Includes obligations related to securities sold under repurchase agreements and securities lent and other liabilities.

Derivative instruments and structured transactions

Derivatives

The Bank uses derivatives to meet customer needs, generate revenues from trading activities, manage market and credit risks arising from its lending, funding and investment activities, and to lower its cost of capital. The Bank uses several types of derivative products, including interest rate swaps, futures and options, to hedge interest rate risk exposure. Forward contracts, swaps and options are used to manage foreign currency risk exposures. Credit exposures in its lending and investment books are managed using credit default swaps. As a dealer, the Bank markets a range of derivatives to its customers, including interest rate, foreign exchange, equity, commodity and credit derivatives.

Market risk arising from derivatives transactions is subject to the control, reporting and analytical techniques noted above. Additional controls and analytical techniques are applied to address certain market-related risks that are unique to derivative products.

Structured transactions
Structured transactions are specialized transactions that may involve combinations of cash, other financial assets and derivatives designed to meet the specific risk management or financial requirements of customers. These transactions are carefully evaluated by the Bank to identify and address the credit, market, legal, tax, reputational and other risks, and are subject to a cross-functional review and sign-off by Trading Management, Global Risk Management, Taxation, Finance and Legal departments. Large structured transactions are also subject to review by senior risk management committees and evaluated in accordance with the procedures described below in Reputational Risk.

The market risk in these transactions is usually minimal, and returns are earned by providing structuring expertise and by taking credit risk. Once executed, structured transactions are subject to the same ongoing credit reviews and market risk analysis as other types of derivatives transactions. This review and analysis includes careful monitoring of the quality of the reference assets, and ongoing valuation of the derivatives and reference assets.

Liquidity Risk

Liquidity risk is the risk that the Bank is unable to meet its financial obligations in a timely manner at reasonable prices. Financial obligations include liabilities to depositors, payments due under derivative contracts, settlement of securities borrowing and repurchase transactions, and lending and investment commitments.

Effective liquidity risk management is essential to maintain the confidence of depositors and counterparties, manage the Bank's cost of funds and to support core business activities, even under adverse circumstances.

Liquidity risk is managed within the framework of policies and limits that are approved by the Board of Directors. The Board receives reports on risk exposures and performance against approved limits. The Asset-Liability Committee (ALCO) provides senior management oversight of liquidity risk.

The key elements of the liquidity risk framework are:

- Measurement and modeling – the Bank's liquidity model measures and forecasts cash inflows and outflows, including off-balance sheet cash flows on a daily basis. Risk is managed by a set of key limits over the maximum net cash outflow by currency over specified short-term horizons (cash gaps), a minimum level of core liquidity, and liquidity stress tests.
- Reporting – Global Risk Management provides independent oversight of all significant liquidity risks, supporting the ALCO with analysis, risk measurement, stress testing, monitoring and reporting.
- Stress testing – the Bank performs liquidity stress testing on a regular basis, to evaluate the effect of both industry-wide and Bank-specific disruptions on the Bank's liquidity position. Liquidity stress testing has many purposes including:
  - Helping the Bank understand the potential behavior of various on-balance sheet and off-balance sheet positions in circumstances of stress; and
  - Based on this knowledge, facilitating the development of risk mitigation and contingency plans.

  The Bank's liquidity stress tests consider the effect of changes in funding assumptions, depositor behavior and the market value of liquid assets. The Bank performs industry standard stress tests, the results of which are reviewed at senior levels of the organization and are considered in making liquidity management decisions.
- Contingency planning – the Bank maintains a liquidity contingency plan that specifies an approach for analyzing and responding to actual and potential liquidity events. The plan outlines an appropriate governance structure for the management and monitoring of liquidity events, processes for effective internal and external communication, and identifies potential counter measures to be considered at various stages of an event. A contingency plan is maintained both at the parent-level as well as for major subsidiaries.
- Funding diversification – the Bank actively manages the diversification of its deposit liabilities by source, type of depositor, instrument, term and geography.
- Core liquidity – the Bank maintains a pool of highly liquid, unencumbered assets that can be readily sold or pledged to secure borrowings under stressed market conditions or due to Bank-specific events. The Bank also maintains liquid assets to support its intra-day settlement obligations in payment, depository and clearing systems.

Liquid assets
Liquid assets are a key component of liquidity management and the Bank holds these types of assets in sufficient quantity to meet potential needs for liquidity management.

Liquid assets can be used to generate cash either through sale, repurchase transactions or other transactions where these assets can be used as collateral to generate cash, or by allowing the asset to mature. Liquid assets include deposits at central banks, deposits with financial institutions, call and other short-term loans, marketable securities, precious metals and securities received as collateral from securities financing and derivative transactions. Liquid assets do not include borrowing capacity from central bank facilities.

Marketable securities are securities traded in active markets, which can be converted to cash within a timeframe that is in accordance with the Bank's liquidity management framework. Assets are assessed considering a number of factors, including the expected time it would take to convert them to cash.

Marketable securities included in liquid assets are comprised of securities specifically held as a liquidity buffer or for asset liability management purposes; trading securities, which are primarily held by Global Banking and Markets; and collateral received for securities financing and derivative transactions.

The Bank maintains large holdings of unencumbered liquid assets to support its operations. These assets generally can be sold or pledged to meet the Bank's obligations. As at October 31, 2018, unencumbered liquid assets were $202 billion (October 31, 2017 – $180 billion). Securities including NHA mortgage-backed securities, comprised 71% of liquid assets (October 31, 2017 – 67%). Other unencumbered liquid assets, comprising cash and deposits with central banks, deposits with financial institutions, precious metals and call and short loans, were 29% (October 31, 2017 – 33%). The increase in liquid assets was mainly attributable to an increase in unencumbered foreign government obligations, deposits with financial institutions and NHA mortgage-backed securities, which was partially offset by a decrease in cash and deposits with central banks and precious metals.

MANAGEMENT'S DISCUSSION AND ANALYSIS

The carrying values outlined in the liquid asset table are consistent with the carrying values in the Bank's Consolidated Statement of Financial Position as at October 31, 2018. The liquidity value of the portfolio will vary under different stress events as different assumptions are used for the stress scenarios.

The Bank's liquid asset pool is summarized in the following table:

T48 Liquid asset pool

As at October 31, 2018 ($ millions)	Bank-owned liquid assets	Securities received as collateral from securities financing and derivative transactions	Total liquid assets	Encumbered liquid assets: Pledged as collateral	Encumbered liquid assets: Other(1)	Unencumbered liquid assets: Available as collateral	Unencumbered liquid assets: Other
Cash and deposits with central banks	**$ 48,352**	**$ –**	**$ 48,352**	**$ –**	**$ 7,906**	**$ 40,446**	**$ –**
Deposits with financial institutions	**13,917**	**–**	**13,917**	**–**	**73**	**13,844**	**–**
Precious metals	**3,191**	**–**	**3,191**	**–**	**70**	**3,121**	**–**
Securities:							
Canadian government obligations	**45,260**	**11,050**	**56,310**	**29,464**	**–**	**26,846**	**–**
Foreign government obligations	**60,553**	**63,816**	**124,369**	**68,531**	**–**	**55,838**	**–**
Other securities	**54,786**	**66,704**	**121,490**	**92,280**	**–**	**29,210**	**–**
Loans:							
NHA mortgage-backed securities(2)	**34,636**	**–**	**34,636**	**2,605**	**–**	**32,031**	**–**
Call and short loans	**1,047**	**–**	**1,047**	**–**	**–**	**1,047**	**–**
Total	**$ 261,742**	**$ 141,570**	**$ 403,312**	**$ 192,880**	**$ 8,049**	**$ 202,383**	**$ –**

As at October 31, 2017(3) ($ millions)	Bank-owned liquid assets	Securities received as collateral from securities financing and derivative transactions	Total liquid assets	Encumbered liquid assets: Pledged as collateral	Encumbered liquid assets: Other(1)	Unencumbered liquid assets: Available as collateral	Unencumbered liquid assets: Other
Cash and deposits with central banks	$ 49,754	$ –	$ 49,754	$ –	$ 7,306	$ 42,448	$ –
Deposits with financial institutions	9,909	–	9,909	–	108	9,801	–
Precious metals	5,717	–	5,717	–	123	5,594	–
Securities:							
Canadian government obligations	41,791	9,836	51,627	24,505	–	27,122	–
Foreign government obligations	47,388	54,286	101,674	75,362	–	26,312	–
Other securities	56,444	59,590	116,034	79,363	–	36,671	–
Loans:							
NHA mortgage-backed securities(2)	33,327	–	33,327	2,360	–	30,967	–
Call and short loans	1,405	–	1,405	–	–	1,405	–
Total	$ 245,735	$ 123,712	$ 369,447	$ 181,590	$ 7,537	$ 180,320	$ –

(1) Assets which are restricted from being used to secure funding for legal or other reasons.
(2) These mortgage-backed securities, which are available for sale, are reported as residential mortgage loans on the Consolidated Statement of Financial Position.
(3) Amounts have not been restated in accordance with IFRS 9; prior period amounts are prepared in accordance with IAS 39 (refer to Notes 3 and 4 in the consolidated financial statements).

A summary of total unencumbered liquid assets held by the parent bank and its branches, and domestic and foreign subsidiaries, is presented below:

T49 Total unencumbered liquid assets held by the parent bank and its branches, and domestic and foreign subsidiaries

As at October 31 ($ millions)	2018	2017
The Bank of Nova Scotia (Parent)	**$ 152,728**	$ 131,838
Bank domestic subsidiaries	**15,344**	13,753
Bank foreign subsidiaries	**34,311**	34,729
Total	**$ 202,383**	$ 180,320

The Bank's liquidity pool is held across major currencies, mostly comprised of Canadian and U.S. dollar holdings. As shown above, the vast majority (83%) of liquid assets are held by the Bank's corporate office, branches of the Bank, and Canadian subsidiaries of the Bank. To the extent a liquidity reserve held in a foreign subsidiary of the Bank is required for regulatory purposes, it is assumed to be unavailable to the rest of the Group. Other liquid assets held by a foreign subsidiary are assumed to be available only in limited circumstances. The Bank monitors and ensures compliance in relation to minimum levels of liquidity required and assets held within each entity, and/or jurisdiction.

Encumbered assets

In the course of the Bank's day-to-day activities, securities and other assets are pledged to secure an obligation, participate in clearing or settlement systems, or operate in a foreign jurisdiction. Securities are also pledged under repurchase agreements. A summary of encumbered and unencumbered assets is presented below:

T50 Asset encumbrance

As at October 31, 2018 ($ millions)	Bank-owned assets	Securities received as collateral from securities financing and derivative transactions	Total assets	Encumbered assets: Pledged as collateral	Encumbered assets: Other(1)	Unencumbered assets: Available as collateral(2)	Unencumbered assets: Other(3)
Cash and deposits with central banks	**$ 48,352**	**$ –**	**$ 48,352**	**$ –**	**$ 7,906**	**$ 40,446**	**$ –**
Deposits with financial institutions	**13,917**	**–**	**13,917**	**–**	**73**	**13,844**	**–**
Precious metals	**3,191**	**–**	**3,191**	**–**	**70**	**3,121**	**–**
Liquid securities:							
Canadian government obligations	**45,260**	**11,050**	**56,310**	**29,464**	**–**	**26,846**	**–**
Foreign government obligations	**60,553**	**63,816**	**124,369**	**68,531**	**–**	**55,838**	**–**
Other liquid securities	**54,786**	**66,704**	**121,490**	**92,280**	**–**	**29,210**	**–**
Other securities	**3,283**	**5,400**	**8,683**	**4,978**	**–**	**–**	**3,705**
Loans classified as liquid assets:							
NHA mortgage-backed securities	**34,636**	**–**	**34,636**	**2,605**	**–**	**32,031**	**–**
Call and short loans	**1,047**	**–**	**1,047**	**–**	**–**	**1,047**	**–**
Other loans	**530,485**	**–**	**530,485**	**8,430**	**59,460**	**12,864**	**449,731**
Other financial assets(4)	**163,209**	**(92,624)**	**70,585**	**2,619**	**–**	**–**	**67,966**
Non-financial assets	**39,774**	**–**	**39,774**	**–**	**–**	**–**	**39,774**
Total	**$ 998,493**	**$ 54,346**	**$ 1,052,839**	**$ 208,907**	**$ 67,509**	**$ 215,247**	**$ 561,176**

As at October 31, 2017 ($ millions)	Bank-owned assets	Securities received as collateral from securities financing and derivative transactions	Total assets	Encumbered assets: Pledged as collateral	Encumbered assets: Other(1)	Unencumbered assets: Available as collateral(2)	Unencumbered assets: Other(3)
Cash and deposits with central banks	$ 49,754	$ –	$ 49,754	$ –	$ 7,306	$ 42,448	$ –
Deposits with financial institutions	9,909	–	9,909	–	108	9,801	–
Precious metals	5,717	–	5,717	–	123	5,594	–
Liquid securities:							
Canadian government obligations	41,791	9,836	51,627	24,505	–	27,122	–
Foreign government obligations	47,388	54,286	101,674	75,362	–	26,312	–
Other liquid securities	56,444	59,590	116,034	79,363	–	36,671	–
Other securities	2,311	4,645	6,956	2,916	–	–	4,040
Loans classified as liquid assets:							
NHA mortgage-backed securities	33,327	–	33,327	2,360	–	30,967	–
Call and short loans	1,405	–	1,405	–	–	1,405	–
Other loans	486,949	–	486,949	6,072	54,746	12,721	413,410
Other financial assets(4)	151,329	(85,691)	65,638	4,212	–	–	61,426
Non-financial assets	28,949	–	28,949	–	–	–	28,949
Total	$ 915,273	$ 42,666	$ 957,939	$ 194,790	$ 62,283	$ 193,041	$ 507,825

(1) Assets which are restricted from being used to secure funding for legal or other reasons.
(2) Assets that are readily available in the normal course of business to secure funding or meet collateral needs including central bank borrowing immediately available.
(3) Other unencumbered assets are not subject to any restrictions on their use to secure funding or as collateral but the Bank would not consider them to be readily available. These include loans, a portion of which may be used to access central bank facilities outside of the normal course or to raise secured funding through the Bank's secured funding programs.
(4) Securities received as collateral against other financial assets are included within liquid securities and other securities.

As of October 31, 2018, total encumbered assets of the Bank were $276 billion (October 31, 2017 – $257 billion). Of the remaining $776 billion (October 31, 2017 – $701 billion) of unencumbered assets, $215 billion (October 31, 2017 – $193 billion) are considered readily available in the normal course of business to secure funding or meet collateral needs as detailed above.

In some over-the-counter derivative contracts, the Bank would be required to post additional collateral or receive less collateral in the event its credit rating was downgraded. The Bank maintains access to sufficient collateral to meet these obligations in the event of a downgrade of its ratings by one or more of the rating agencies. As at October 31, 2018, the potential adverse impact on derivatives collateral that would result from a one-notch or two-notch downgrade of the Bank's rating below its lowest current rating was $50 million or $306 million, respectively.

Encumbered liquid assets are not considered to be available for liquidity management purposes. Liquid assets which are used to hedge derivative positions in trading books or for hedging purposes are considered to be available for liquidity management provided they meet the criteria discussed in liquid assets above.

Liquidity coverage ratio

The Liquidity Coverage Ratio measure (LCR) is based on a 30-day liquidity stress scenario, with assumptions defined in the OSFI Liquidity Adequacy Requirements (LAR) Guideline. The LCR is calculated as the ratio of high quality liquid assets (HQLA) to net cash outflows. The Bank is subject to a regulatory minimum LCR of 100%.

OSFI's LAR stipulates that banks must maintain an adequate level of unencumbered HQLA that can be converted into cash to meet liquidity needs over a 30 calendar day horizon under a pre-defined significantly severe liquidity stress scenario. The LCR-prescribed liquidity stress scenario includes assumptions for asset haircuts, deposit run-off, wholesale rollover rates, and outflow rates for commitments.

HQLA are grouped into three categories: Level 1, Level 2A and Level 2B, based on guidelines from the LAR. Level 1 HQLA receive no haircuts, and includes cash, deposits with central banks, central bank reserves available to the Bank in times of stress, and securities with a 0% risk weight. Level 2A and 2B include HQLA of lesser quality and attracts haircuts ranging from 15%-50%.

The total weighted values for net cash outflows for the next 30 days are derived by applying the assumptions specified in the LAR Guideline to specific items, including loans, deposits, maturing debt, derivative transactions and commitments to extend credit.

The following table presents the Bank's average LCR for the quarter ended October 31, 2018, based on the average daily position in the quarter.

T51 Bank's average LCR

For the quarter ended October 31, 2018 ($ millions) (1)	Total unweighted value (Average)(2)	Total weighted value (Average)(3)
High-quality liquid assets		
Total high-quality liquid assets (HQLA)	*	**$ 144,349**
Cash outflows		
Retail deposits and deposits from small business customers, of which:	$ 173,809	12,191
Stable deposits	76,795	2,490
Less stable deposits	97,014	9,701
Unsecured wholesale funding, of which:	179,528	87,967
Operational deposits (all counterparties) and deposits in networks of cooperative banks	56,756	13,596
Non-operational deposits (all counterparties)	96,549	48,148
Unsecured debt	26,223	26,223
Secured wholesale funding	*	35,239
Additional requirements, of which:	198,215	42,822
Outflows related to derivative exposures and other collateral requirements	26,346	18,481
Outflows related to loss of funding on debt products	3,605	3,605
Credit and liquidity facilities	168,264	20,736
Other contractual funding obligations	1,231	1,186
Other contingent funding obligations(4)	454,996	7,678
Total cash outflows	*	**$ 187,083**
Cash inflows		
Secured lending (e.g. reverse repos)	$ 130,332	$ 29,206
Inflows from fully performing exposures	24,564	15,738
Other cash inflows	25,404	25,404
Total cash inflows	**$ 180,300**	**$ 70,348**

		Total adjusted value(5)
Total HQLA	*	**$ 144,349**
Total net cash outflows	*	**$ 116,735**
Liquidity coverage ratio (%)	*	**124%**

For the quarter ended October 31, 2017 ($ millions)		Total adjusted value(5)
Total HQLA	*	$ 127,444
Total net cash outflows	*	$ 101,751
Liquidity coverage ratio (%)	*	125%

* Disclosure is not required under regulatory guideline.
(1) Based on the average daily positions of the 63 business days in the quarter.
(2) Unweighted values represent outstanding balances maturing or callable within the next 30 days.
(3) Weighted values represent balances calculated after the application of HQLA haircuts or inflow and outflow rates, as prescribed by the OSFI LAR guidelines.
(4) Total unweighted value includes uncommitted credit and liquidity facilities, guarantees and letters of credit, outstanding debt securities with remaining maturity greater than 30 days, and other contractual cash outflows.
(5) Total adjusted value represents balances calculated after the application of both haircuts and inflow and outflow rates and any applicable caps.

HQLA continues to be substantially comprised of Level 1 assets. The Bank's average LCR for the quarter ended October 31, 2018 was in line with the quarter ended October 31, 2017.

The Bank's significant operating currencies are Canadian and U.S. dollars. The Bank monitors its significant currency exposures in accordance with its liquidity risk management framework and risk appetite.

Funding

The Bank ensures that its funding sources are well diversified. Funding concentrations are regularly monitored and analyzed by type. The sources of funding are capital, deposits from retail and commercial clients sourced through the Canadian and international branch network, deposits from financial institutions as well as wholesale debt issuances.

Capital and personal deposits are key components of the Bank's core funding and these amounted to $289 billion as at October 31, 2018 (October 31, 2017 – $269 billion). The increase since October 31, 2017, was primarily due to deposit growth, internal capital generation and common and preferred share issuance, net of common share repurchases and redemptions of preferred shares and subordinated debentures. A portion of commercial deposits, particularly those of an operating or relationship nature, would be considered part of the Bank's core funding. Furthermore, core funding is augmented by longer term wholesale debt issuances (original maturity over 1 year) of $157 billion (October 31, 2017 – $146 billion). Longer term wholesale debt issuances include senior notes, mortgage securitizations, asset-backed securities and covered bonds.

The Bank operates in many different currencies and countries. From a funding perspective, the most significant currencies are Canadian and U.S. dollars. With respect to the Bank's operations outside Canada, there are different funding strategies depending on the nature of the activities in each country. For those countries where the Bank operates a branch banking subsidiary, the strategy is for the subsidiary to be substantially self-funding in its local market. For other subsidiaries or branches outside Canada where local deposit gathering capability is not sufficient, funding is provided through the wholesale funding activities of the Bank.

From an overall funding perspective the Bank's objective is to achieve an appropriate balance between the cost and the stability of funding. Diversification of funding sources is a key element of the funding strategy.

The Bank's wholesale debt diversification strategy is primarily executed via the Bank's main wholesale funding centres, located in Toronto, New York, London and Singapore. The majority of these funds are sourced in Canadian and U.S. dollars. Where required, these funds are swapped to fund assets in different currencies. The funding strategy deployed by wholesale funding centres and the management of associated risks, such as geographic and currency risk, are managed centrally within the framework of policies and limits that are approved by the Board of Directors.

In the normal course, the Bank uses a mix of unsecured and secured wholesale funding instruments across a variety of markets. The choice of instruments and markets is based on a number of factors, including relative cost and market capacity as well as an objective of maintaining a diversified mix of sources of funding. Market conditions can change over time, impacting cost and capacity in particular markets or instruments. Changing market conditions can include periods of stress where the availability of funding in particular markets or instruments is constrained. In these circumstances the Bank would increase its focus on sources of funding in functioning markets and secured funding instruments. Should a period of extreme stress exist such that all wholesale funding sources are constrained, the Bank maintains a pool of liquid assets to mitigate its liquidity risk. This pool includes cash, deposits with central banks and securities.

In Canada, the Bank raises short- and longer-term wholesale debt through the issuance of senior unsecured notes. Additional longer-term wholesale debt may be generated through the Bank's Canadian Debt and Equity Shelf, the securitization of Canadian insured residential mortgages through CMHC securitization programs (such as Canada Mortgage Bonds), uninsured residential mortgages through the Bank's Covered Bond Program, unsecured personal lines of credit through the Halifax Receivables Trust (previously Hollis Receivables Term Trust II) program, retail credit card receivables through the Trillium Credit Card Trust II program and retail indirect auto loan receivables through the Securitized Term Auto Receivables Trust program. While the Bank includes CMHC securitization programs in its view of wholesale debt issuance, this source of funding does not entail the run-off risk that can be experienced in funding raised from capital markets.

Outside of Canada, short-term wholesale debt may be raised through the issuance of negotiable certificates of deposit in the United States, Hong Kong, the United Kingdom, and Australia and the issuance of commercial paper in the United States. The Bank operates longer-term wholesale debt issuance registered programs in the United States, such as its SEC Registered Debt and Equity Shelf, and non-registered programs, such as the securitization of retail indirect auto loan receivables through the Securitized Term Auto Receivables Trust program and the securitization of retail credit card receivables through the Trillium Credit Card Trust II program. The Bank's Covered Bond Program is listed with the U.K. Listing Authority, and the Bank may issue under the program in Europe, the United States, Australia and Switzerland. The Bank also raises longer-term funding across a variety of currencies through its Australian Medium Term Note Programme, European Medium Term Note Programme and Singapore Medium Term Note Programme. The Bank's European Medium Term Note Programme is listed with the U.K. Listing Authority, Swiss Stock Exchange and the Tokyo Pro-Bond Market. The Bank's Singapore Medium Term Note Programme is listed with the Singapore Exchange and the Taiwan Exchange.

On September 23, 2018, the Bank Recapitalization (Bail-in) Conversion Regulations and the Bank Recapitalization (Bail-in) Issuance Regulations came into force. In general, any issuance of senior debt with an initial or amended term to maturity (including explicit or embedded options) greater than 400 days, that is unsecured or partially secured and has been assigned a CUSIP or ISIN or similar identification number is subject, in whole or in part, to conversion into the Bank's common shares. Please refer to the "Regulatory Developments" section.

MANAGEMENT'S DISCUSSION AND ANALYSIS

The table below provides the remaining contractual maturities of funding raised through wholesale funding. In the Consolidated Statement of Financial Position, these liabilities are primarily included in Business & Government Deposits.

T52 Wholesale funding(1)

As at October 31, 2018 ($ millions)	**Less than 1 month**	**1-3 months**	**3-6 months**	**6-9 months**	**9-12 months**	**Sub-Total < 1 Year**	**1-2 years**	**2-5 years**	**>5 years**	**Total**
Deposits from banks(2)	**$ 1,720**	**$ 196**	**$ 211**	**$ 212**	**$ 116**	**$ 2,455**	**$ 29**	**$ 145**	**$ 32**	**$ 2,661**
Bearer deposit notes, commercial paper and short-term certificate of deposits	**8,807**	**14,201**	**21,517**	**15,961**	**7,580**	**68,066**	**5,487**	**666**	**56**	**74,275**
Asset-backed commercial paper(3)	**2,088**	**4,697**	**165**	**–**	**–**	**6,950**	**–**	**–**	**–**	**6,950**
Senior notes(4)(5)	**180**	**2,714**	**4,070**	**6,214**	**5,168**	**18,346**	**15,179**	**36,765**	**14,298**	**84,588**
Bail-inable notes(5)	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Asset-backed securities	**6**	**15**	**47**	**500**	**–**	**568**	**2,714**	**1,944**	**304**	**5,530**
Covered bonds	**–**	**2,910**	**1,491**	**–**	**1,975**	**6,376**	**4,312**	**16,779**	**1,772**	**29,239**
Mortgage securitization(6)	**–**	**765**	**316**	**567**	**508**	**2,156**	**2,388**	**12,966**	**4,646**	**22,156**
Subordinated debentures(7)	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**237**	**7,539**	**7,776**
Total wholesale funding sources	**$ 12,801**	**$ 25,498**	**$ 27,817**	**$ 23,454**	**$ 15,347**	**$ 104,917**	**$ 30,109**	**$ 69,502**	**$ 28,647**	**$ 233,175**
Of Which:										
Unsecured funding	**$ 10,707**	**$ 17,111**	**$ 25,798**	**$ 22,387**	**$ 12,864**	**$ 88,867**	**$ 20,695**	**$ 37,813**	**$ 21,925**	**$ 169,300**
Secured funding	**2,094**	**8,387**	**2,019**	**1,067**	**2,483**	**16,050**	**9,414**	**31,689**	**6,722**	**63,875**

As at October 31, 2017 ($ millions)	Less than 1 month	1-3 months	3-6 months	6-9 months	9-12 months	Sub-Total < 1 Year	1-2 years	2-5 years	>5 years	Total
Deposits from banks(2)	$ 2,740	$ 471	$ 405	$ 264	$ 110	$ 3,990	$ 205	$ 153	$ –	$ 4,348
Bearer deposit notes, commercial paper and short-term certificate of deposits	7,699	12,227	22,351	12,740	7,557	62,574	5,685	495	12	68,766
Asset-backed commercial paper(3)	1,885	4,233	981	–	–	7,099	–	–	–	7,099
Senior notes(4)(5)	24	3,621	8,480	5,469	6,378	23,972	13,024	32,927	10,453	80,376
Asset-backed securities	–	1	–	1,162	215	1,378	822	1,975	351	4,526
Covered bonds	2,821	–	–	13	686	3,520	6,378	14,719	1,410	26,027
Mortgage securitization(6)	–	569	666	556	310	2,101	2,158	10,522	4,943	19,724
Subordinated debentures(7)	–	–	–	–	–	–	–	181	7,022	7,203
Total wholesale funding sources	$ 15,169	$ 21,122	$ 32,883	$ 20,204	$ 15,256	$ 104,634	$ 28,272	$ 60,972	$ 24,191	$ 218,069
Of Which:										
Unsecured funding	$ 10,463	$ 16,319	$ 31,236	$ 18,474	$ 14,045	$ 90,537	$ 18,914	$ 33,755	$ 17,487	$ 160,693
Secured funding	4,706	4,803	1,647	1,730	1,211	14,097	9,358	27,217	6,704	57,376

(1) Wholesale funding sources exclude repo transactions and bankers acceptances, which are disclosed in the T56 Contractual maturities. Amounts are based on remaining term to maturity.
(2) Only includes commercial bank deposits raised by Group Treasury.
(3) Wholesale funding sources also exclude asset-backed commercial paper issued by certain ABCP conduits that are not consolidated for financial reporting purposes.
(4) Not subject to bail-in.
(5) Includes Structured notes issued to institutional investors.
(6) Represents residential mortgages funded through Canadian Federal Government agency sponsored programs. Funding accessed through such programs does not impact the funding capacity of the Bank in its own name.
(7) Although subordinated debentures are a component of regulatory capital, they are included in this table in accordance with EDTF recommended disclosures.

Wholesale funding generally bears a higher risk of run-off in a stressed environment than other sources of funding. The Bank mitigates this risk through funding diversification, ongoing engagement with investors and by maintaining a large holding of unencumbered liquid assets. Unencumbered liquid assets of $202 billion as at October 31, 2018 (October 31, 2017 – $180 billion) were well in excess of wholesale funding sources that mature in the next twelve months.

Contractual maturities and obligations

The table below provides the maturity of assets and liabilities as well as the off-balance sheet commitments as at October 31, 2018, based on the contractual maturity date.

From a liquidity risk perspective the Bank considers factors other than contractual maturity in the assessment of liquid assets or in determining expected future cash flows. In particular, for securities with a fixed maturity date, the ability and time horizon to raise cash from these securities is more relevant to liquidity management than contractual maturity. For other assets and deposits the Bank uses assumptions about rollover rates to assess liquidity risk for normal course and stress scenarios. Similarly, the Bank uses assumptions to assess the potential drawdown of credit commitments in various scenarios.

The Bank's contractual obligations include contracts and purchase obligations, including agreements to purchase goods and services that are enforceable, legally binding on the Bank and affect the Bank's liquidity and capital resource needs. The Bank leases a large number of its branches, offices and other locations. The majority of these leases are for a term of five years, with options to renew. The total cost of these leases, net of rental income from subleases, was $477 million in 2018 (2017 – $444 million). The increase primarily reflects higher contractual rents, the impact of branch and office sale/leasebacks and acquisitions of BBVA Chile and Citibank Colombia.

MANAGEMENT'S DISCUSSION AND ANALYSIS

T53 Contractual maturities

	As at October 31, 2018									
($ millions)	Less than one month	One to three months	Three to six months	Six to nine months	Nine to twelve months	One to two years	Two to five years	Over five years	No specific maturity	Total
Assets										
Cash and deposits with financial institutions and precious metals	$ 54,254	$ 920	$ 284	$ 101	$ 117	$ 326	$ 726	$ 223	$ 8,509	$ 65,460
Trading assets	4,792	5,311	3,326	5,463	2,309	7,934	12,765	18,130	40,232	100,262
Financial instruments designated at fair value through profit or loss	–	–	–	–	12	–	–	–	–	12
Securities purchased under resale agreement and securities borrowed	74,522	21,223	5,743	673	337	549	539	432	–	104,018
Derivative financial instruments	3,178	5,517	2,024	2,327	1,446	6,447	6,071	10,548	–	37,558
Investment securities – FVOCI	3,925	6,436	5,852	3,284	3,243	13,139	15,206	4,758	1,305	57,148
Investment securities – amortized cost	452	1,429	1,160	1,501	1,500	4,302	9,465	934	–	20,743
Investment securities – FVTPL	–	–	–	–	–	–	–	–	505	505
Loans	40,463	27,581	28,920	27,246	28,064	93,191	214,017	34,985	57,367	551,834
Residential mortgages	11,496	4,697	8,774	12,014	12,781	53,629	126,934	21,366	1,666(1)	253,357
Personal loans	4,204	2,701	3,528	3,431	3,558	11,712	23,338	5,468	38,079	96,019
Credit cards	–	–	–	–	–	–	–	–	16,485	16,485
Business and government	24,763	20,183	16,618	11,801	11,725	27,850	63,745	8,151	6,202(2)	191,038
Allowance for credit losses	–	–	–	–	–	–	–	–	(5,065)	(5,065)
Customers' liabilities under acceptances	13,829	2,082	338	50	30	–	–	–	–	16,329
Other assets	–	–	–	–	–	–	–	–	44,624	44,624
Total assets	195,415	70,499	47,647	40,645	37,058	125,888	258,789	70,010	152,542	998,493
Liabilities and equity										
Deposits	$ 56,965	$53,331	$ 48,661	$ 39,716	$ 32,753	$ 45,262	$ 78,295	$ 18,313	$ 303,238	$ 676,534
Personal	8,797	9,415	12,536	9,563	10,241	13,472	11,953	261	138,307	214,545
Non-personal	48,168	43,916	36,125	30,153	22,512	31,790	66,342	18,052	164,931	461,989
Financial instruments designated at fair value through profit or loss	22	77	360	410	523	3,090	1,646	1,969	91	8,188
Acceptances	13,838	2,082	338	50	30	–	–	–	–	16,338
Obligations related to securities sold short	910	972	870	305	1,013	3,896	8,685	7,388	8,048	32,087
Derivative financial instruments	2,520	4,288	1,613	2,716	1,583	6,773	7,699	10,775	–	37,967
Obligations related to securities sold under repurchase agreements and securities lent	96,157	3,466	1,634	–	–	–	–	–	–	101,257
Subordinated debentures	–	–	–	–	–	–	–	5,698	–	5,698
Other liabilities	2,720	592	1,302	422	757	1,784	6,167	5,978	33,022	52,744
Total equity	–	–	–	–	–	–	–	–	67,680	67,680
Total liabilities and equity	173,132	64,808	54,778	43,619	36,659	60,805	102,492	50,121	412,079	998,493
Off-Balance sheet commitments										
Operating leases	$ 36	$ 72	$ 106	$ 104	$ 102	$ 378	$ 818	$ 880	$ –	$ 2,496
Credit commitments(3)	4,232	5,588	13,438	15,182	22,619	23,906	105,988	6,486	–	197,439
Financial guarantees(4)	–	–	–	–	–	–	–	–	36,423	36,423
Outsourcing obligations(5)	18	36	52	52	52	207	311	–	1	729

(1) Includes primarily impaired mortgages.
(2) Includes primarily overdrafts and impaired loans.
(3) Includes the undrawn component of committed credit and liquidity facilities.
(4) Includes outstanding balances of guarantees, standby letters of credit and commercial letters of credit which may expire undrawn.
(5) The Bank relies on outsourcing arrangements for certain support and/or business functions, including, but not limited to, computer operations and cheque and bill payment processing. Outsourcing partners include, among others, IBM Canada and Symcor Inc.

	As at October 31, 2017									
($ millions)	Less than one month	One to three months	Three to six months	Six to nine months	Nine to twelve months	One to two years	Two to five years	Over five years	No specific maturity	Total
Assets										
Cash and deposits with financial institutions and precious metals	$ 51,646	$ 894	$ 395	$ 175	$ 159	$ 396	$ 514	$ 290	$ 10,911	$ 65,380
Trading assets	5,484	5,106	3,275	2,740	2,224	5,272	14,816	17,776	41,771	98,464
Financial instruments designated at fair value through profit or loss	–	–	–	–	–	13	–	–	–	13
Securities purchased under resale agreement and securities borrowed	73,346	16,966	3,732	1,087	188	–	–	–	–	95,319
Derivative financial instruments	3,544	4,558	2,084	1,418	1,274	4,303	8,375	9,808	–	35,364
Investment securities – available-for-sale	3,094	5,645	4,495	2,170	2,131	6,506	18,098	7,054	1,311	50,504
Investment securities – held-to-maturity	739	779	1,052	1,193	123	5,847	8,923	109	–	18,765
Loans	28,840	25,032	28,778	29,291	27,197	74,303	209,229	28,667	53,032	504,369
Residential mortgages	3,072	4,065	9,542	15,700	13,083	42,460	129,448	18,017	1,529(1)	236,916
Personal loans	3,980	2,309	3,124	3,322	3,217	10,899	20,601	5,293	36,482	89,227
Credit cards	–	–	–	–	–	–	–	–	14,104	14,104
Business and government	21,788	18,658	16,112	10,269	10,897	20,944	59,180	5,357	5,244(2)	168,449
Allowance for credit losses	–	–	–	–	–	–	–	–	(4,327)	(4,327)
Customers' liabilities under acceptances	10,875	2,399	254	22	10	–	–	–	–	13,560
Other assets	–	–	–	–	–	–	–	–	33,535	33,535
Total assets	177,568	61,379	44,065	38,096	33,306	96,640	259,955	63,704	140,560	915,273
Liabilities and equity										
Deposits	$ 56,154	$ 48,037	$ 49,107	$ 30,938	$ 26,373	$ 44,735	$ 73,099	$ 16,037	$ 280,887	$ 625,367
Personal	7,058	7,247	8,500	7,840	7,862	13,223	13,741	393	134,166	200,030
Non-personal	49,096	40,790	40,607	23,098	18,511	31,512	59,358	15,644	146,721	425,337
Financial instruments designated at fair value through profit or loss	–	3	5	118	133	543	2,882	979	–	4,663
Acceptances	10,875	2,399	254	22	10	–	–	–	–	13,560
Obligations related to securities sold short	336	167	97	148	1,057	3,354	9,229	9,935	6,443	30,766
Derivative financial instruments	2,810	3,348	1,786	1,258	1,347	3,056	11,534	9,061	–	34,200
Obligations related to securities sold under repurchase agreements and securities lent	85,636	8,452	1,524	229	2	–	–	–	–	95,843
Subordinated debentures	–	–	–	–	–	–	–	5,935	–	5,935
Other liabilities	1,419	1,076	440	824	187	1,369	3,223	4,314	30,462	43,314
Total equity	–	–	–	–	–	–	–	–	61,625	61,625
Total liabilities and equity	157,230	63,482	53,213	33,537	29,109	53,057	99,967	46,261	379,417	915,273
Off-Balance sheet commitments										
Operating leases	$ 30	$ 60	$ 88	$ 87	$ 84	$ 311	$ 656	$ 593	$ –	$ 1,909
Credit commitments(3)	4,661	5,913	12,862	18,293	17,254	24,091	97,773	4,819	–	185,666
Financial guarantees(4)	–	–	–	–	–	–	–	–	36,344	36,344
Outsourcing obligations(5)	19	37	54	53	53	207	517	–	1	941

(1) Includes primarily impaired mortgages.
(2) Includes primarily overdrafts and impaired loans.
(3) Includes the undrawn component of committed credit and liquidity facilities.
(4) Includes outstanding balances of guarantees, standby letters of credit and commercial letters of credit which may expire undrawn.
(5) The Bank relies on outsourcing arrangements for certain support and/or business functions, including, but not limited to, computer operations and cheque and bill payment processing. Outsourcing partners include, among others, IBM Canada and Symcor Inc.

Other Risks

Operational Risk

Operational risk is the risk of loss, resulting from people, inadequate or failed processes and systems, or from external events. Operational risk includes legal risk but excludes strategic risk and reputational risk. Operational risk in some form exists in each of the Bank's businesses and support activities and can result in financial loss, regulatory sanctions and damage to the Bank's reputation. Operational risk is inherent in all our activities, including the practices and controls used to manage other risks. Failure to manage operational risk can result in direct or indirect financial loss, but also in regulatory sanctions and reputational impact.

Governance and organization

The Bank's Operational Risk Management Framework sets out an integrated approach to identify, assess, control, mitigate and report operational risks across the Bank. The following are key components of the Bank's Operational Risk Management Framework:

- The Bank's Risk and Control Self-Assessment program, which includes formal reviews of significant units, operations and processes to identify and assess operational risks. This program provides a basis for management to ensure that key risks have been identified and that controls are functioning effectively. Business line management attests to the accuracy of each assessment and develops action plans to mitigate residual risk exposure, as appropriate.
- The Bank's scenario analysis program provides a forward looking view of key risks and provides management with insights into how plausible but highly unlikely operational risk events might occur. Scenario analysis will also assist in the selection of severity distributions in the Bank's Advanced Measurement Approach (AMA) capital model (discussed below).
- The Bank's Key Risk Indicator (KRI) program provides information on the level of exposure to a given operational risk at a particular point in time and can help to monitor potential shifts in risk conditions or new emerging risks and/or measure residual risk exposure and effectiveness of controls.
- The Business Environment and Internal Control Factors (BEICF) program incorporates the impact of key business environment and internal control factors into the regulatory capital allocated to divisions by utilizing a BEICF scorecard. The scorecard is used to adjust capital calculations produced using the Bank's AMA capital model and due to its forward-looking nature, it also assists with identifying new trends and emerging risks.
- The Bank's New Initiatives Risk Management Policy which describes the general principles applicable to the review, approval and implementation of new products and services within Scotiabank and is intended to provide overarching guidance.
- The Bank's centralized operational loss event database, which captures key information on operational losses and near-misses.
- The Bank's monitoring of industry events, which identifies significant losses incurred at other financial institutions and provides a reference for reviewing and assessing the Bank's own risk exposure.
- The Bank's training programs, including the mandatory Anti-Money Laundering, Operational Risk and Information Security courses and examinations which work to ensure employees are aware of relevant risks and are equipped to safeguard our customers' and the Bank's assets.
- Operational risk reporting is provided to the Bank's senior executive management and the Board of Directors, and includes information relating to key events, results, trends and themes across the operational risk tools. The combination of these information sources provides both a backward and forward-looking view of operational risk at the Bank.

Operational risk capital

There are two methods for the calculation of operational risk regulatory capital available to the Bank under the Basel framework – The Standardized Approach and the Advanced Measurement Approach (AMA). In 2016, OSFI approved our application to use the Advanced Measurement Approach (AMA) for operational risk, subject to a capital floor. In 2017, we formally began utilizing AMA to report regulatory capital.

Information Technology (IT) & Cybersecurity Risk

IT Risk refers to the likelihood of failures or deficiencies related to the IT environment that may result in loss or other negative impact to the Bank. IT risk is the business risk associated with the use, ownership, operation, involvement, influence and adoption of IT within an enterprise. Cybersecurity risk is a sub-discipline of IT risk, and refers to the protection of information assets by addressing threats to information processed, stored, and transported by internetworked information systems. IT & Cybersecurity risk consists of information technology related events (e.g., cybersecurity incidents, outages) that could potentially have an adverse impact on our business. Such events could result in business interruption, service disruptions, theft of intellectual property and confidential information, additional regulatory scrutiny, litigation and reputational damage.

IT and Cyber Security risks continue to evolve across the financial industry. The increasing use of online delivery channels and mobile devices to perform financial transactions leave the bank vulnerable to operational disruptions due to multiple factors such as: human errors, frauds, infrastructure failures, issues with our business partners, among others. Those events may increase costs or may negatively impact the Bank's operational environment, our customers and other third parties. Regulatory oversight of IT and Cyber Security risk management practices has also been increased.

The Board of Directors approves the IT Risk Management and Information Security polices, which along with the respective frameworks are focused on safeguarding the Bank's and its customers information, ensuring the Bank's IT environment is reliable, secure, resilient and robust in supporting our business objectives.

Significant efforts are directed on risk management activities including the Cyber Security program in line with the industry standards and best practices. The Bank is expanding its capabilities to defend against potential threats and minimize the impact to the business, including the regular testing activities to continuously reinforce the Bank's resilience to events caused by factors out of the Bank's control. The dependency on third parties and the potential risks they bring to the continuity of our business activities is a key area of focus. The Bank has a governance framework to mitigate those risks.

The Bank continuously monitors the metrics and Key Risk Indicators, which are regularly reported to the Board of Directors, its Risk Committee and other internal committees who oversee the performance of the associated risk thresholds. Material issues are escalated to the executive management committees to ensure appropriate remediation. Information security awareness campaigns are conducted periodically, including annual mandatory training sessions on information security and operational risk to all our employees, reinforcing our risk culture.

Compliance Risk

Compliance Risk is the risk that a business activity may not be conducted in conformity with applicable Regulations, internal policies and procedures and ethical standards expected by regulators, customers, investors, employees and other stakeholders. "Regulations" means all Governmental Acts, laws, rules, regulations, regulatory guidelines and industry or self-regulatory organizational codes of conduct, rules and by-laws.

The Bank conducts business in many jurisdictions around the world and provides a wide variety of financial products and services through its various lines of business and operations. It is subject to, and must comply with, many and changing Regulations by governmental agencies, supervisory authorities and self-regulatory organizations in all the jurisdictions in which the Bank operates. The regulatory bar is constantly rising with Regulations being more vigorously enforced and new Regulations being enacted. The bar of public expectations is also constantly rising. Regulators and customers expect the Bank and its employees will operate its business in compliance with applicable laws and will refrain from unethical practices.

Compliance risk is managed on an enterprise-wide basis throughout the Bank via the operation of the Scotiabank Compliance Program ("the Program") which includes the appointment of a Chief Compliance Officer (CCO) for the Bank and is responsible for overseeing Compliance Risk Management within the Bank. The CCO is responsible for assessing the adequacy of, adherence to and effectiveness of the Program, as well as for the development and application of written compliance policies and procedures that are kept up to date and approved by senior management, assessing and documenting compliance risks, developing and maintaining a written compliance training program, which in each case is performed either directly or indirectly by other departments within the Bank in coordination with Global Compliance. This program and these ancillary activities are subject to Internal Audit's periodic review to assess the effectiveness of the Program.

The Board-approved Scotiabank Compliance Policy describes the general policies and principles applicable to compliance risk management within Scotiabank and encompasses the Bank's Regulatory Compliance Management framework as contemplated by OSFI Guideline E-13. The Compliance Policy is an integral part of the enterprise-wide policies and procedures that collectively articulate the Bank's governance and control structure. Other more specifically focused compliance risk management policies and procedures may be developed within the framework established by the Compliance Policy where necessary or appropriate.

Money Laundering & Terrorist Financing Risk

Money Laundering & Terrorist Financing (ML/TF) risk is the susceptibility of Scotiabank to be used by individuals or organizations to launder the proceeds of crime, finance terrorism, or violate economic sanctions. It also includes the risk that Scotiabank does not conform to applicable Anti-Money Laundering ("AML") / Anti-Terrorist Financing ("ATF") or sanctions legislation, or does not apply adequate controls reasonably designed to deter and detect ML/TF and sanctions violations or to file any required regulatory reports.

Money laundering, terrorist financing, and sanctions risks are managed throughout the Bank via the operation of the Bank's AML/ATF and Sanctions program ("the Program") which includes the appointment of a Chief Anti-Money Laundering Officer responsible for the Program, development and application of written compliance policies and procedures that are kept up to date and approved by senior management, assessing and documenting the risk of money laundering, terrorist-financing or sanctions violations, developing and maintaining a written ongoing compliance training program, and regular review of the effectiveness of the Program conducted by Internal Audit. The Chief Anti-Money Laundering Officer has unfettered access to, and direct communication with, Executive Management of the Bank and its Board.

In providing financial services to its customers, the Bank conducts Customer Due Diligence sufficient to form a reasonable belief that it knows the true identity of its customers, including in the case of an entity customer its material beneficial owners. The Bank will not maintain anonymous accounts, nor will it maintain accounts for shell Banks. Consistent with a risk-based approach, the Bank assesses the risks of its customers and, where appropriate, conducts enhanced due diligence on those who are considered higher risk. The Bank also conducts ongoing risk-based monitoring of its customers to detect and report suspicious transactions, and conducts customer and transaction screening against terrorist, sanctions, and other designated watch-lists. All active employees are provided with mandatory AML/ATF training on an annual basis.

The Bank's business units conduct an annual self-assessment of their ML/TF risks, as well as self-assessments of their control measures designed to manage such risks. The process is overseen by the Bank's Global AML/ATF Unit and the results shared with the Bank's Senior Management and its Board.

Reputational Risk

Reputational risk is the risk that negative publicity regarding Scotiabank's conduct, business practices or associations, whether true or not, will adversely affect its revenues, operations or customer base, or require costly litigation or other defensive measures.

Negative publicity about an institution's business practices may involve any aspect of its operations, but usually relates to questions of business ethics and integrity, or quality of products and services. Negative publicity and attendant reputational risk frequently arise as a by-product of some other kind of risk management control failure.

Reputational risk is managed and controlled throughout the Bank by codes of conduct, governance practices and risk management programs, policies, procedures and training. Many relevant checks and balances are outlined in greater detail under other risk management sections, particularly Operational Risk, where reference is made to the Bank's well-established compliance program. All directors, officers and employees have a responsibility to conduct their activities in accordance with the Scotiabank's Code of Conduct, and in a manner that minimizes reputational risk. While all employees, officers and directors are expected to protect the reputation of Scotiabank by complying with the Scotiabank's Code of Conduct, the activities of the Legal, Global Tax, Corporate Secretary, Global Communications, Global AML/ATF, Global Compliance and Global Risk Management departments, and the Reputational Risk Committee, are particularly oriented to the management of reputational risk.

In providing credit, advice, or products to customers, or entering into associations, the Bank considers whether the transaction, relationship or association might give rise to reputational risk. The Bank has a Reputational Risk Policy, as well as policy and procedures for managing reputational and legal risk related to structured finance transactions. Global Risk Management plays a significant role in the identification and management of reputational risk related to credit underwriting. In addition, the Reputational Risk Committee is available to support Global Risk Management, as well as other risk management committees and business units, with their assessment of reputational risk associated with transactions, business initiatives, new products and services and sales practice issues.

The Reputational Risk Committee considers a broad array of factors when assessing transactions, so that the Bank meets, and will be seen to meet, high ethical standards. These factors include the extent, and outcome, of legal and regulatory due diligence pertinent to the transaction; the economic intent of the transaction; the effect of the transaction on the transparency of a customer's financial reporting; the need for customer or public disclosure; conflicts of interest; fairness issues; and public perception. The Reputational Risk Committee also holds regular quarterly meetings to review activities in the quarter, review metrics and discuss any emerging trends or themes.

The Reputational Risk Committee may impose conditions on customer transactions, including customer disclosure requirements to promote transparency in financial reporting, so that transactions meet Bank standards. In the event the Committee recommends not proceeding with a transaction and the sponsor of the transaction wishes to proceed, the transaction is referred to the Risk Policy Committee.

Environmental Risk

Environmental risk refers to the possibility that environmental concerns involving Scotiabank or its customers could affect the Bank's performance.

To safeguard the Bank and the interests of its stakeholders, Scotiabank has an environmental policy, which is approved by the Bank's Board of Directors. The policy guides day-to-day operations, lending practices, supplier agreements, the management of real estate holdings and external reporting practices. It is supplemented by specific policies and practices relating to individual business lines.

Environmental risks associated with the business operations of each borrower and any real property offered as security are considered in the Bank's credit evaluation procedures. This includes an environmental risk assessment where applicable, and commentary on the potential impact of climate change (including physical or transition risk impacts) on the borrower. Global Risk Management has primary responsibility for establishing the related policies, processes and standards associated with mitigating environmental risk in the Bank's lending activities. Decisions are taken in the context of the risk management framework.

In the area of project finance, the Equator Principles have been integrated into the Bank's internal processes and procedures since 2006. The Equator Principles help financial institutions determine, assess, manage and report environmental and social risk. The principles apply to project finance loans and advisory assignments where total capital costs exceed US$10 million, and to certain project-related corporate loans. The Equator Principles provide safeguards for sensitive projects to ensure protection of natural habitats and the rights of indigenous peoples, as well as safeguards against the use of child and forced labour.

The Bank's Environmental Policy plays a prominent role in guiding the reduction of the Bank's environmental footprint. The Real Estate Department adheres to an Environmental Compliance Policy to ensure responsible management of the Bank's real estate holdings from an environmental perspective. In addition, a variety of reduction measures are in place for energy, paper and waste in the Bank's corporate offices and branch networks. Internal tracking systems are in place with respect to energy use, greenhouse gas emissions (GHG) and paper consumption. Since 2012, GHG emissions data for the branch network and corporate offices has been externally verified.

To continue operations in an environmentally responsible manner, the Bank monitors policy and legislative requirements through ongoing dialogue with government, industry and stakeholders in countries where it operates. Scotiabank has been meeting with environmental organizations, industry associations and socially responsible investment organizations with respect to the role that banks can play to help address issues such as climate change, protection of biodiversity, promotion of sustainable forestry practices, implementing the recommendations of the Task Force on Climate-related Financial Disclosure, and other environmental issues important to its customers and communities where it operates. The Bank has an ongoing process of reviewing its practices in these areas.

Scotiabank has a number of environmentally focused products and services, including: an EcoEnergy Financing program designed to support personal and small business customers who wish to install small-scale renewable energy projects; and an auto loan product for hybrid, electric and clean diesel vehicles. As well, Scotiabank has the Commodities Derivatives group, which assists corporate clients by providing liquidity and hedge solutions in the carbon market.

Environmental Reporting

Scotiabank is also a signatory to, and participant in the Carbon Disclosure Project, which provides corporate disclosure to the investment community on greenhouse gas emissions and climate change management. Further information is available in the Bank's annual Corporate Social Responsibility Report.

Insurance Risk

The Bank is both a distributor of third party insurance products and underwriter of insurance risk. As a distributor of third party insurance products, the Bank earns fees but bears no insurance risk. The Bank bears insurance risk in its role as an underwriter, either through direct underwriting or via reinsurance.

Insurance risk is the risk of potential financial loss due to actual experience being different from that assumed in the pricing process of the insurance products.

Insurance by nature involves the distribution of products that transfer individual risks to the issuer with the expectation of a return built into the insurance premiums earned. The Bank is exposed to insurance risk primarily through its creditor, life and select property and casualty insurance and reinsurance products.

The insurance governance and risk management frameworks are calibrated within each insurance subsidiary commensurate with the nature and materiality of risk assumed. Senior management within the insurance business subsidiaries has primary responsibility for managing insurance risk through their risk committees. Typical committee members include the Chief Executive Officer, Chief Financial Officer and Chief Risk Officer. Second line of defense oversight is provided by Global Risk Management – Insurance Risk. The insurance subsidiaries have their own boards of directors, as well as independent appointed actuaries who provide actuarial management oversight.

The insurance subsidiaries maintain a number of policies and practices to manage insurance risk. Sound product design is an essential element. The vast majority of risks insured are short-term in nature, that is, they do not involve long-term pricing guarantees. Geographic diversification and product-line diversification are important elements as well. Reinsurance is commonly used as an effective tool to manage the insurance risk exposures. Insurance risk is also managed through effective underwriting and claim adjudication practices, ongoing monitoring of experience, and stress-testing scenario analysis.

Strategic Risk

Strategic risk is the risk that the enterprise, business lines or corporate functions will make strategic choices that are ineffective or insufficiently resilient to changes in the business environment, or poorly execute such strategies.

The Board of Directors is ultimately responsible for oversight of strategic risk, by adopting a strategic planning process and approving, on an annual basis, a strategic plan for the Bank.

The Bank manages its strategic planning process through a series of coordinated efforts between the Executive Management Team, the Business Lines and the Corporate Functions. These efforts address a wide range of relevant considerations including capital and resource allocation, business initiatives, strategic transactions and investments, stress testing and alignment with the Bank's Risk Appetite Framework. These considerations are reviewed in a consistent and disciplined manner. The process involves input from the entire Executive Management Team and from the Board of Directors.

On an annual basis, a comprehensive update on the Strategic Agenda is prepared that summarizes the Bank's key strategic considerations, and is presented by the President and Chief Executive Officer to the Board of Directors for their review and approval.

The execution and evaluation of strategic plans within the Bank is critically important to the Bank's enterprise-wide risk management framework. The Bank makes continuous efforts to ensure that all employees are aware of the Bank's overall strategic direction, and that employees are also aware of the strategies and objectives for their respective business line or corporate function. On an ongoing basis, the business lines and corporate functions identify, manage and assess the internal and external considerations – including risk factors – that could affect the achievement of their strategic objectives. These matters are considered on an enterprise-wide basis by the Bank's Executive Management Team, which makes adjustments, as required.

Data Risk

Data risk is the risk, whether direct or indirect, to data that is used to support the Bank's ability to make informed decisions and develop accurate reporting and analytics for the Bank, including the Board, senior management and regulators, or for customer facing and/or marketing purposes. Risks to which the Bank is exposed include data management, data taxonomy, metadata, breaches or data that is incomplete, inaccurate, invalid, untimely and/or inaccessible.

Data is considered one of the Bank's most strategic assets and the volume, value and type of data found within the Bank has exponentially increased in recent years. Enhanced rigor towards data management is a concentrated focus for the Bank with the increase in regulatory demands. The Data Executive Committee approves the Data Management Policy and Governance Framework. The goals of the policy and framework are to ensure oversight and management of critical Bank-wide data, and to provide governance, oversight, control structure and accountabilities to enable greater enterprise coordination and consistency.

The Data Office oversees and standardizes data management and data governance practices in establishing reliable, reusable and scalable data and is responsible for enterprise-wide management of data risk. Since data is produced and consumed by different business lines and geographies across the Bank, an effective, collaborative and holistic approach to data risk management is required to minimize reputational, regulatory and financial risk.

CONTROLS AND ACCOUNTING POLICIES

Controls and Procedures

Management's responsibility for financial information contained in this annual report is described on page 140.

Disclosure controls and procedures

The Bank's disclosure controls and procedures are designed to provide reasonable assurance that information is accumulated and communicated to the Bank's management, including the President and Chief Executive Officer and the Executive Vice President and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

As of October 31, 2018, the Bank's management, with the participation of the President and Chief Executive Officer and the Executive Vice President and Chief Financial Officer, evaluated the effectiveness of its disclosure controls and procedures, as defined under the rules adopted by the U.S. Securities and Exchange Commission (SEC) and the Canadian securities regulatory authorities, and have concluded that the Bank's disclosure controls and procedures are effective.

Internal control over financial reporting

Management of the Bank is responsible for establishing and maintaining adequate internal control over financial reporting. These controls include policies and procedures that:

- pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Bank;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB), and that receipts and expenditures are being made only in accordance with authorizations of management and directors of the Bank; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Bank's assets that could have a material effect on the financial statements.

All control systems contain inherent limitations, no matter how well designed. As a result, the Bank's management acknowledges that its internal control over financial reporting will not prevent or detect all misstatements due to error or fraud. In addition, management's evaluation of controls can provide only reasonable, not absolute, assurance that all control issues that may result in material misstatements, if any, have been detected.

Management assessed the effectiveness of internal control over financial reporting, using the Internal Control-Integrated Framework 2013 issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and based on that assessment concluded that internal control over financial reporting was effective as of October 31, 2018.

Changes in internal control over financial reporting

There have been no changes in the Bank's internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, the Bank's internal control over financial reporting. The Bank adopted IFRS 9, *Financial Instruments* effective November 1, 2017 and as a result, has updated and modified certain internal controls over financial reporting. Refer to Note 3 of the consolidated financial statements for further information on changes to accounting policies and Note 4 regarding the transition impact on adoption of IFRS 9.

Critical Accounting Estimates

The Bank's accounting policies are integral to understanding and interpreting the financial results reported in this annual report. Note 3 to the consolidated financial statements, summarizes the significant accounting policies used in preparing the Bank's consolidated financial statements. Certain of these policies require management to make estimates, assumptions and subjective judgements that are difficult, complex, and often relate to matters that are inherently uncertain. The policies discussed below are considered to be particularly important to the presentation of the Bank's financial position and results of operations, because changes in the estimates, assumptions and judgements could have a material impact on the Bank's consolidated financial statements. These estimates, assumptions and judgements are adjusted in the normal course of business to reflect changing underlying circumstances.

Allowance for credit losses

Effective in 2018, the allowance for credit losses, using an expected credit loss approach as required under IFRS 9, is estimated using complex models and incorporates inputs, assumptions and techniques that involve a high degree of management judgment. Under IFRS 9 expected credit loss methodology, an allowance is recorded for expected credit losses on financial assets regardless of whether there has been an actual loss event. The Bank recognizes an 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). When a financial asset experiences a significant increase in credit risk subsequent to origination but is not considered to be in default, it is included in Stage 2 and subject to lifetime expected credit losses. Financial assets that are in default are included in Stage 3. Similar to Stage 2, the allowance for credit losses for Stage 3 financial assets captures the lifetime expected credit losses.

The main drivers in allowance for credit loss changes that are subject to significant judgment include the following:

- Determination of point-in-time parameters such as probability of default (PD), loss given default (LGD) and exposure at default (EAD).
- Forecast of macroeconomic variables for multiple scenarios and probability weighting of the scenarios.
- Assessment of significant increase in credit risk.

Measurement of expected credit losses

The probability of default (PD), exposure at default (EAD), and loss given default (LGD) inputs used to estimate expected credit losses are modelled based on macroeconomic variables that are most closely related with credit losses in the relevant portfolio.

Details of these statistical parameters/inputs are as follows:

- PD – The probability of default is an estimate of the likelihood of default over a given time horizon. A default may only happen at a certain time over the remaining estimated life, if the facility has not been previously derecognized and is still in the portfolio.

- EAD – The exposure at default is an estimate of the exposure at a future default date, taking into account expected changes in the exposure after the reporting date, including repayments of principal and interest, whether scheduled by contract or otherwise, expected drawdowns on committed facilities, and accrued interest from missed payments.
- LGD – The loss given default is an estimate of the loss arising in the case where a default occurs at a given time. It is based on the difference between the contractual cash flows due and those that the lender would expect to receive, including from the realization of any collateral. It is usually expressed as a percentage of the EAD.

Forward-looking macroeconomic scenarios
The Bank uses a broad range of forward-looking economic information as inputs to its models of expected credit losses and the related allowance. These include real GDP, unemployment rates, central-bank interest rates, and house-price indices. The allowance is determined using three probability-weighted, forward-looking scenarios. The Bank considers both internal and external sources of information and data in order to create unbiased projections and forecasts. The Bank prepares the scenarios using forecasts generated by Scotiabank Economics (SE). The forecasts are generated using both internally and externally developed models whose outputs are modified by SE as necessary to formulate a 'base case' view of the most probable future direction of economic developments; SE also develops a representative range of other alternative possible forecast scenarios. More specifically, the process involves the development of two additional economic scenarios to which relative probabilities are assigned. The development of the baseline and alternative scenarios is overseen by a governance committee that consists of internal stakeholders from across the bank. The final baseline and alternative scenarios reflect significant review and oversight, and may incorporate some judgment both in the determination of the scenarios' forecasts and the probability weights that are assigned to them. Qualitative adjustments or overlays may also be made as temporary adjustments using expert credit judgment in circumstances where, in the Bank's view, the existing regulatory guidance, inputs, assumptions, and/or modelling techniques do not capture all relevant risk factors. The use of management overlays may require significant judgment that may impact the amount of allowance recognized.

Significant Increase in credit risk (SIR)
The assessment of SIR since origination of a financial asset considers borrower-specific quantitative and qualitative information without consideration of collateral, and the impact of forward-looking information. Quantitative models may not always be able to capture all reasonable and supportable information that may indicate a significant increase in credit risk. Qualitative factors may be assessed to supplement the gap. Examples of situations include changes in adjudication criteria for a particular group of borrowers; changes in portfolio composition and natural disaster events impacting certain portfolios.

For retail exposures, a significant increase in credit risk cannot be assessed using forward looking information at an individual account level. Therefore, the assessment must be done at the segment level. Segment migration thresholds exist for each PD model by product which considers the proportionate change in PD as well as the absolute change in PD. The thresholds used for PD migration are reviewed and assessed at least annually, unless there is a significant change in credit risk management practices in which case the review is brought forward.

For Non-retail exposures the Bank uses an internal risk rating scale (IG codes) for its non-retail exposures. All non-retail exposures have an IG code assigned that reflects the probability of default of the borrower. Both borrower specific and non-borrower specific (i.e. macroeconomic) forward looking information is considered and reflected in the IG rating. Significant increase in credit risk is evaluated based on the migration of the exposures among IG codes.

Fair value of financial instruments
All financial instruments are measured at fair value on initial recognition. Subsequent measurement of a financial instrument depends on its classification. The contractual cash flow characteristics of a financial instrument and the business model under which it is held determines such classification. Non-trading loans and receivables, certain securities and most financial liabilities are carried at amortized cost unless classified or designated as fair value through profit and loss or fair value through other comprehensive income at inception.

Fair value of a financial asset or liability is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants in the principal, or in its absence, the most advantageous market to which the Bank has access at the measurement date.

The best evidence of fair value for a financial instrument is the quoted price in an active market. Unadjusted quoted market prices for identical instruments represent a Level 1 valuation. Quoted prices are not always available for over-the-counter transactions, as well as transactions in inactive or illiquid markets. In these instances, internal models that maximize the use of observable inputs are used to estimate fair value. The chosen valuation technique incorporates all the factors that market participants would take into account in pricing a transaction. When all significant inputs are observable, the valuation is classified as Level 2. Financial instruments traded in a less active market have been valued using indicative market prices, present value of cash flows or other valuation techniques. Fair value estimates normally do not consider forced or liquidation sales. Where financial instruments trade in inactive markets or when using models where observable parameters do not exist, greater management judgement is required for valuation purposes such as multiple of the underlying earnings, pricing by third party providers, discount rates, volatilities and correlations. Valuations that require the significant use of unobservable inputs are considered Level 3. The calculation of estimated fair value is based on market conditions at a specific point in time and therefore may not be reflective of future fair values.

The Bank has controls and processes in place to ensure that the valuation of financial instruments is appropriately determined. Global Risk Management (GRM) is responsible for the design and application of the Bank's risk management framework. GRM is independent from the Bank's business units and is overseen by Executive Management and the Board of Directors. Senior management committees within GRM oversee and establish standards for risk management processes that are critical in ensuring that appropriate valuation methodologies and policies are in place for determining fair value.

Where possible, valuations are based on quoted prices or observable inputs obtained from active markets. GRM oversees a monthly Independent Price Verification (IPV) process in order to assess the reliability and accuracy of prices and inputs used in the determination of fair value. The IPV process is performed by price verification groups that are independent from the business. The Bank maintains an approved list of pricing sources that are used in the IPV process. These sources include, but are not limited to, brokers, dealers and consensus pricing services. The valuation policies relating to the IPV process require that all pricing or rate sources used be external to the Bank. On a periodic basis, an independent assessment of pricing or rate sources is also performed by GRM to determine market presence or market representative levels.

Where quoted prices are not readily available, such as for transactions in inactive or illiquid markets, internal models that maximize the use of observable inputs are used to estimate fair value. An independent senior management committee within GRM oversees the vetting, approval and ongoing validation of valuation models used in determining fair value. Risk policies associated with model development are approved by Executive Management and/or key risk committees.

In determining fair value for certain instruments or portfolios of instruments, valuation adjustments or reserves may be required to arrive at a more accurate representation of fair value. The Bank's policy of applying valuation reserves to a portfolio of instruments is approved by a senior management committee. These reserves include adjustments for credit risk, bid-offer spreads, unobservable parameters, constraints on prices in inactive or illiquid markets and when applicable funding costs. The methodology for the calculation of valuation reserves are reviewed at least annually by senior management.

Valuation adjustments recorded against the fair value of financial assets and financial liabilities totaled $138 million as at October 31, 2018, (2017 – $94 million), net of any write-offs. These valuation adjustments are due mainly to credit risk considerations and bid-offer spreads on derivative transactions.

As at October 31, 2018, a funding valuation adjustment (FVA) of $57 million pre-tax (2017 – $80 million) was recorded relating to uncollateralized derivative instruments.

The Bank discloses the classification of all financial instruments carried at fair value in a hierarchy based on the determination of fair value. The valuation hierarchy is as follows:

- Level 1 – fair value is based on unadjusted quoted prices in active markets for identical instruments,
- Level 2 – fair value is based on models using significant market-observable inputs other than quoted prices for the instruments, or
- Level 3 – fair value is based on models using significant inputs that are not based on observable market data.

The Bank's assets and liabilities which are carried at fair value as classified by the valuation hierarchy are reflected in Note 7. The percentage of each asset and liability category by fair value hierarchy level are outlined as follows:

T54 Fair value hierarchy of financial instruments carried at fair value

	Assets			Liabilities	
Fair value hierarchy As at October 31, 2018	Trading assets (incl. precious metals)	Investment securities	Derivatives	Obligations related to securities sold short	Derivatives
Level 1	63%	65%	3%	77%	3%
Level 2	37%	34%	97%	23%	97%
Level 3	–%	1%	–%	–%	–%
	100%	100%	100%	100%	100%

Employee benefits

The Bank provides pension and other benefit plans for eligible employees in Canada and internationally. Pension benefits are offered in the form of defined benefit pension plans (generally based on an employee's length of service and average earnings at retirement), and in the form of defined contribution pension plans (where the Bank's contribution is fixed and there is no legal or constructive obligation to pay further amounts). Other benefits include post-retirement health care, dental care and life insurance, along with other long-term employee benefits such as long-term disability benefits.

The employee benefit expenses and the related benefit obligation are calculated using actuarial methods and certain actuarial assumptions. These assumptions are based on management's best estimate and are reviewed and approved annually. The most significant assumption is the discount rate used to determine the defined benefit obligation, which is set by reference to the yields on high quality corporate bonds that have durations that match the terms of the Bank's obligations. Separate discount rates are used to determine the annual benefit expense in Canada and the US. These rates are determined with reference to the yields on high quality corporate bonds with durations that match the various components of the annual benefit expense. The discount rate used to determine the annual benefit expense for all other plans is the same as the rate used to determine the defined benefit obligation. If the assumed discount rates were 1% lower, the benefit expense for 2018 would have been $135 million higher. Other key assumptions include future compensation, health care costs, employee turnover, retirement age and mortality. When making these estimates, management considers expectations of future economic trends and business conditions, including inflation rates as well as other factors, such as plan specific experience and best practices.

The Bank uses a measurement date of October 31, and based on this measurement date, the Bank reported a deficit of $231 million (2017 – $513 million) in its principal pension plans and a deficit of $1,134 million (2017 – $1,392 million) in its principal other benefit plans, which are typically unfunded, as at October 31, 2018, as disclosed in Note 28 to the consolidated financial statements.

Actual experience that differs from assumptions made by management will result in a net actuarial gain or loss recognized immediately in other comprehensive income except for other long-term employee benefits where they are recognized in the Consolidated Statement of Income.

Note 28 contains details of the Bank's employee benefit plans, such as the disclosure of pension and other benefit amounts, management's key assumptions, and a sensitivity analysis of changes in these assumptions on the employee benefit obligation and expense.

Corporate income taxes

Management exercises judgment in determining the provision for income taxes and deferred income tax assets and liabilities. The provision is based on management's expectations regarding the income tax consequences of transactions and events during the period. Management interprets the tax legislation for each jurisdiction in which the Bank operates and makes assumptions about the expected timing of the reversal of deferred income tax assets and liabilities. If management's interpretations of the legislation differ from those of the tax authorities or if the actual timing of the reversals of the deferred income tax assets and liabilities is not as anticipated, the provision for income taxes could increase or decrease in future periods.

Total deferred tax assets related to the Bank's unused income tax losses from operations arising in prior years were $338 million as at October 31, 2018 (2017 – $417 million). The tax related to temporary differences, unused tax losses and unused tax credits for which no deferred tax asset is recognized in the Consolidated Statement of Financial Position amounted to $14 million (2017 – $82 million). The amount related to unrecognized tax losses was $7 million, which will expire as follows: $1 million in 2020 and $6 million in 2023.

The Bank maintains provisions for uncertain tax positions that it believes appropriately reflect the risk of tax positions under discussion, audit, dispute, or appeal with tax authorities, or which are otherwise considered to involve uncertainty. These provisions are made using the Bank's best estimate of the amount expected to be paid based on an assessment of all relevant factors, which are reviewed at the end of each reporting period.

In November 2016, the Bank received a federal reassessment of $179 million for tax and interest as a result of the Canada Revenue Agency denying the tax deductibility of certain Canadian dividends received during the 2011 taxation year. In August 2017, the Bank received a reassessment of $185 million for tax and interest for the 2012 taxation year. The circumstances of the dividends subject to the reassessment are similar to those prospectively addressed by recently enacted rules which had been introduced in the 2015 Canadian federal budget. In June 2018, the Bank received a reassessment of $211 million for tax and interest in respect of the same circumstances for the 2013 taxation year. The Bank is confident that its tax filing position was appropriate and in accordance with the relevant provisions of the Income Tax Act (Canada), and intends to vigorously defend its position.

Note 27 of the 2018 consolidated financial statements contains further details with respect to the Bank's provisions for income taxes.

Structured entities

In the normal course of business, the Bank enters into arrangements with structured entities on behalf of its customers and for its own purposes. These structured entities can be generally categorized as multi-seller commercial paper conduits, Bank funding vehicles and structured finance entities. Further details are provided in the Off-balance sheet arrangements section.

Management is required to exercise judgement to determine whether a structured entity should be consolidated. This evaluation involves understanding the arrangements, determining whether decisions about the relevant activities are made by means of voting rights or other contractual arrangements, and determining whether the Bank controls the structured entity.

The Bank controls an investee when it is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. The three elements of control are:

- power over the investee;
- exposure, or rights, to variable returns from involvement with the investee; and
- the ability to use power over the investee to affect the amount of the Bank's returns.

This definition of control applies to circumstances:

- when voting rights or similar rights give the Bank power, including situations where the Bank holds less than a majority of voting rights or involving potential voting rights;
- when an investee is designed so that voting rights are not the dominant factor in deciding who controls the investee (i.e., relevant activities are directed by contractual arrangements);
- involving agency relationships; and
- when the Bank has control over specified assets of an investee.

The Bank does not control an investee when it is acting in an agent's capacity. The Bank assesses whether it is an agent by determining whether it is primarily engaged to act on behalf and for the benefit of another party or parties. Factors that the Bank considers in this assessment include the scope of its decision-making authority over the investee, the rights held by other parties, the remuneration to which it is entitled, and the Bank's exposure to variability of returns from other interests that it holds in the investee.

The analysis uses both qualitative and quantitative analytical techniques and involves the use of a number of assumptions about the business environment in which the structured entity operates and the amount and timing of future cash flows.

The Bank reassesses whether it controls an investee if facts and circumstances indicate that one or more of the three elements of control change.

Management is required to exercise judgement to determine if a change in control event has occurred.

During 2018, there were no change in control events that caused the Bank to change its control conclusion of its multi-seller conduits or other structured entities.

As described in Note 15 to the consolidated financial statements and in the discussion of off-balance sheet arrangements, the Bank does not control the two Canadian-based multi-seller conduits that it sponsors and they are not required to be consolidated on the Bank's Consolidated Statement of Financial Position. The Bank controls its U.S.-based multi-seller conduit and consolidates it on the Bank's Consolidated Statement of Financial Position.

Goodwill

For the purpose of impairment testing, goodwill acquired in a business combination is, on the acquisition date, allocated to each of the Bank's group of cash-generating units (CGU) that are expected to benefit from the particular acquisition.

Goodwill is not amortized but tested for impairment annually and when circumstances indicate that the carrying value may be impaired.

Goodwill is reviewed at each reporting date to determine whether there is any indication of impairment. Each CGU to which goodwill is allocated for impairment testing purposes reflects the lowest level at which goodwill is monitored for internal management purposes.

The Bank determines the carrying value of the CGU using a regulatory capital approach based on credit, market, and operational risks, and leverage, consistent with the Bank's capital attribution for business line performance measurement. An impairment loss is recognized if the carrying amount of a CGU exceeds its recoverable amount. The recoverable amount is the greater of fair value less costs of disposal and value in use. If either fair value less costs of disposal or value in use exceeds the carrying amount, there is no need to determine the other. The recoverable amount for the CGU has been determined using the fair value less costs of disposal method. In arriving at such value an appropriate valuation model is used which considers various factors including normalized net income, price earnings multiples and control premium. These calculations are corroborated by valuation multiples, quoted share prices for publicly traded subsidiaries or other available fair value indicators. An impairment loss, in respect of goodwill, is not reversed.

Significant judgement is applied in determining the recoverable amounts of the CGU and assessing whether certain events or circumstances constitute objective evidence of impairment.

Goodwill was assessed for annual impairment based on the methodology as at July 31, 2018, and no impairment was determined to exist. Additionally, there were no impairment indicators noted as of October 31, 2018.

Indefinite life intangible assets

Intangible assets with indefinite useful lives are not amortized but tested for impairment annually and when circumstances indicate that the carrying value may be impaired. Intangible assets are reviewed at each reporting date to determine whether there is any indication of impairment.

The recoverable amount is the greater of fair value less costs of disposal and value in use. If either fair value less costs of disposal or value in use exceeds the carrying amount, there is no need to determine the other. Value in use method is used by the Bank to determine the recoverable amount of the intangible asset. In determining value in use, an appropriate valuation model is used which considers factors such as management-approved cash flow projections, discount rate and terminal growth rate. An impairment loss is recognized if the carrying amount of the intangible asset exceeds its recoverable amount. Impairment losses recognized in prior periods are reassessed at each reporting period for any indication that the loss has decreased or no longer exists. An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the intangible asset's carrying amount does not exceed the carrying amount that would have been determined if no impairment loss had been recognized.

The recoverable amount is significantly impacted by the discount rate and the terminal value. Significant judgement is applied in determining the intangible asset's recoverable amount and assessing whether certain events or circumstances constitute objective evidence of impairment.

Intangible assets were assessed for annual impairment based on the methodology as at July 31, 2018, and no impairment was determined to exist. Additionally, there were no impairment indicators noted as of October 31, 2018.

Derecognition of financial assets

Financial assets are derecognized when the contractual rights to the cash flows from the asset have expired, which occurs with repayment by the borrower or upon substantial modification of the asset terms. Assets are also derecognized when the Bank transfers the contractual rights to receive the cash flows from the financial asset, or has assumed an obligation to pay those cash flows to an independent third-party, and the Bank has transferred substantially all the risks and rewards of ownership of that asset to an independent third-party.

Management has to apply judgement in determining whether a modification of the terms of the financial asset is considered to be substantial. For loans, this includes the nature of the modification and the extent of changes to terms including interest rate, authorized amount, term or type of underlying collateral.

Management also has to apply judgement in determining, based on specific facts and circumstances, whether the Bank has retained or transferred substantially all the risks and rewards of ownership of the financial asset. Where substantially all the risks and rewards of ownership of the financial asset are neither retained nor transferred, the Bank derecognizes the transferred asset only if it has lost control over that asset. If the Bank retains control over the asset, it will continue to recognize the asset to the extent of its continuing involvement.

The majority of assets transferred under repurchase agreements, securities lending agreements, securitizations of fully insured Canadian residential mortgages, and securitizations of personal lines of credit, credit cards and auto loans do not qualify for derecognition. The Bank continues to record the transferred assets on the Consolidated Statement of Financial Position as secured financings. Further information on derecognition of financial assets can be found in Note 14 of the consolidated financial statements.

Provisions

The Bank recognizes a provision if, as a result of a past event, the Bank has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Probable in this context means more likely than not. Significant judgement is required in determining whether a present obligation exists and in estimating the probability, timing, and amount of any future outflows.

Litigation and other

In the ordinary course of business, the Bank and its subsidiaries are routinely defendants in, or parties to a number of pending and threatened legal actions and regulatory proceedings, including actions brought on behalf of various classes of claimants. In view of the inherent difficulty of predicting the outcome of such matters, the Bank cannot state what the eventual outcome of such matters will be.

Legal provisions are established when it becomes probable that the Bank will incur an expense related to a legal action and the amount can be reliably estimated. Such 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. Management and internal and external experts are involved in estimating any amounts that may be required. The actual costs of resolving these claims may vary significantly from the amount of the legal provisions. The Bank's estimate involves significant judgement, given the varying stages of the proceedings, the fact that the Bank's liability, if any, has yet to be determined and the fact that the underlying matters will change from time to time. As such, there is a possibility that the ultimate resolution of those legal actions may be material to the Bank's consolidated results of operations for any particular reporting period.

Future Accounting Developments

The Bank actively monitors developments and changes in accounting standards from the IASB as well as regulatory requirements from the Canadian Securities Administrators and OSFI.

Effective November 1, 2018

Revenue from contracts with customers

The IASB issued IFRS 15 *Revenue from Contracts with Customers* (IFRS 15), which replaces the previous revenue standard IAS 18 *Revenue*, and the related Interpretations on revenue recognition.

The standard is a control-based model as compared to the existing revenue standard which is primarily focused on risks and rewards and provides a single principle based framework to be applied to all contracts with customers that are in scope of the standard. Under the new standard, revenue is recognized when a customer obtains control of a good or service. Transfer of control occurs when the customer has the ability to direct the use of and obtain the benefits of the good or service. The standard introduces a new five step model governing revenue recognition to be applied to contracts with customers. The Bank must also determine whether its performance obligation is to provide the service itself (i.e. the Bank acts as a principal) or to arrange another party to provide the service (i.e. the Bank acts as an agent).

The Bank has assessed the scope of the new guidance to be limited to fees and commission revenues from wealth management and banking services in Canadian and International Banking and underwriting and advisory fees in Global Banking and Markets.

The Bank will adopt the standard and its amendments as of November 1, 2018 using the modified retrospective approach. Under this approach, the Bank will recognize the cumulative effect of initially applying the standard as an adjustment to the opening balance of retained earnings as of November 1, 2018, without restating comparative periods. As of November 1, 2018, the opening balance of retained earnings is expected to decrease by approximately $60 million (net of tax). The decrease in retained earnings relates to certain costs no longer eligible for deferral under the new standard and the re-measurement of certain liabilities at fulfilment cost.

The presentation of certain costs will also change prospectively from non-interest expenses to non-interest income where amounts are deemed to be part of consideration payable to customers or the Bank is deemed to be acting as an agent. This presentation change will not have a material impact to the Bank.

Effective November 1, 2019

Financial instruments: Prepayment features with negative compensation

On October 12, 2017, the IASB issued an amendment to IFRS 9 *Financial Instruments*, relating to prepayment features with negative compensation. The amendment will be effective prospectively for annual periods beginning on or after January 1, 2019, which will be effective November 1, 2019 for the Bank. Based on preliminary assessments, the amendment is not expected to have a material impact to the Bank.

Leases

On January 13, 2016, the IASB issued IFRS 16 *Leases*, which requires a lessee to recognize an asset for the right to use the leased item and a liability for the present value of its future lease payments. IFRS 16 will result in leases being recorded on the Bank's balance sheet, including those currently classified as operating leases except for short-term leases and leases with low value of the underlying asset. IFRS 16 substantially carries forward the lessor accounting requirements in IAS 17.

IFRS 16 is effective for the Bank on November 1, 2019. On transition there are practical expedients available whereby the Bank will not need to reassess whether a contract is, or contains a lease, or reassess the accounting of sale leaseback transactions recognized prior to the date of initial application. A lessee will apply IFRS 16 to its leases either retrospectively to each prior reporting period presented; or retrospectively with the cumulative effect of initially applying IFRS 16 being recognized at the date of initial application.

The Bank is currently in the process of assessing existing contractual relationships to identify the existing population of leases that would be recorded on the balance sheet under the new standard. The Bank continues to evaluate the potential impact to the existing IT systems and processes and next steps include performing an initial quantification of the existing obligations and reviewing the additional disclosures required by the new standard. During 2019, the Bank will also complete its assessment of various practical expedients and formulate its accounting policies under IFRS 16.

IFRIC 23 Uncertainty over income tax treatments

On June 7, 2017, the IASB issued IFRIC 23 that is effective for the Bank beginning November 1, 2019. The interpretation clarifies application of recognition and measurement requirements in IAS 12 income taxes when there is uncertainty over income tax treatments. The Bank is currently assessing the impact of the interpretation.

Employee Benefits

On February 7, 2018, the IASB issued narrow-scope amendments to pension accounting that are effective for the Bank beginning November 1, 2019. The amendments relate to when a plan amendment, curtailment or settlement has occurred. In such instances, the Bank is required to use updated assumptions to determine current service cost and net interest for the remainder of the reporting period after the change to the plan. For the Bank, the narrow scope amendments are to be applied prospectively to plan amendments, curtailments and settlements occurring after November 1, 2019.

Effective November 1, 2020

Conceptual Framework

On March 29, 2018, the IASB issued the revised Conceptual Framework for Financial Reporting (Framework) that is effective for the Bank beginning November 1, 2020. The Framework itself is not a standard, and does not override existing standards. It is used by the IASB in developing accounting standards. The Bank is currently assessing the impact of the revisions.

Definition of business

On October 22, 2018, the IASB issued a narrow-scope amendment to IFRS 3 Business Combination. The amendments will help companies determine whether an acquisition is of a business or a group of assets. Distinguishing between a business and a group of assets is important because an acquirer recognizes goodwill only when acquiring a business. The amendments apply to transactions for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after January 1, 2020. Earlier adoption is permitted. The Bank is currently assessing the impact.

Definition of material

On October 31, 2018, the IASB issued amendments to IAS 1 Presentation of Financial Statements and IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors, clarifying the definition of material. Under the new definition, information is material if omitting, misstating or obscuring it could reasonably be expected to influence the decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity. The explanations accompanying the definition have also been improved. The amendments are effective prospectively for annual periods beginning on or after January 1, 2020. Earlier adoption is permitted. The Bank is currently assessing the impact.

Effective November 1, 2021

Insurance contracts

On May 18, 2017, the IASB issued IFRS 17 *Insurance Contracts*, which provides a comprehensive principle-based framework for the measurement and presentation of all insurance contracts. The new standard will replace IFRS 4 *Insurance Contracts* and requires insurance contracts to be measured using current fulfillment cash flows and for revenue to be recognized as the service is provided over the coverage period. On November 14, 2018, the IASB tentatively decided to defer the effective date, by one year, to annual periods on or after January 1, 2022. The Bank will continue to track the IASB Board's meeting agenda items on issues and discussions related to the standard, further updates will be provided in Q1 2019.

The IFRS 17 project structure and governance has been established along with a Project Management Office to assist the Executive Steering and Project Operations Committees. The committees comprise of representatives from Global Finance, Global Insurance Actuarial Services, Information Technology and the Insurance Business Operations. The Bank is currently in the Evaluation and Design Solution phase of the project, with Implementation planned for Fiscal 2019 through 2022.

Regulatory Developments

The Bank continues to monitor and respond to global regulatory developments relating to a broad spectrum of topics, including consumer protection measures and cybersecurity, in order to ensure that control and business units are responsive on a timely basis and business impacts, if any, are minimized.

Bank Recapitalization (Bail-in) Regime and Total Loss Absorbing Capacity (TLAC)

On September 23, 2018, the regulations under the Canada Deposit Insurance Corporation Act (Canada) (the "CDIC Act") and the Bank Act (Canada) (collectively, the "Bail-In Regulations") providing the details of conversion, issuance and compensation regimes for bail-in instruments issued by domestic systemically important banks, including the Bank, came into force. Pursuant to the CDIC Act, in circumstances where the Superintendent of Financial Institutions has determined that the Bank has ceased, or is about to cease, to be viable, the Governor in Council may, upon a recommendation of the Minister of Finance that he or she is of the opinion that it is in the public interest to do so, grant an order directing CDIC to convert all or a portion of certain shares and liabilities of the Bank into common shares of the Bank. For a description of the Canadian bank resolution powers and the consequent risk factors attaching to certain liabilities of the Bank, reference is made to the Annual Information Form.

On April 18, 2018, OSFI issued guidelines on Total Loss Absorbing Capacity (TLAC), which will apply to Canada's D-SIBs as part of the Federal Government's bail-in regime. The standards are intended to address the sufficiency of a systemically important bank's loss absorbing capacity in supporting its recapitalization in the event of its failure. On August 21, 2018, OSFI provided notification requiring systemically important banks to maintain a minimum of 21.5% plus the domestic stability buffer of TLAC eligible instruments relative to their RWAs and 6.75% relative to their leverage exposures. We are expected to comply with the minimum TLAC requirements by November 1, 2021 and to begin disclosing our TLAC ratios in the first quarter of 2019. The Bank does not anticipate any challenges in meeting these TLAC requirements.

United Kingdom and European Regulatory Reform

The U.K. is in negotiations to exit the E.U. and the two-year negotiation period triggered by U.K.'s formal notice of intention to withdraw from the E.U. ends on March 29, 2019. Political agreement has been reached on a transition period, which would extend until December 31, 2020 (and possibly longer), providing additional time in which to ensure readiness, however that is dependent on an overall withdrawal agreement being concluded and ratified. If the transitional period is ratified then all E.U. legislation will continue to apply in the U.K. for its duration. There remains a possibility that the U.K. will leave the E.U. on March 29, 2019 without having a withdrawal agreement in place (a so-called "hard" Brexit).

The U.K.'s exit from the E.U. may result in significant changes in law(s), which may impact the Bank's business, financial condition and/or results of operations and could adversely impact the Bank's cost of funding in Europe. The Bank continually monitors developments to prepare for changes that have the potential to impact its operations in the U.K. and elsewhere in Europe and is developing and revising its contingency plans accordingly.

Cybersecurity and privacy developments

On November 1, 2018, changes to Canada's Personal Information Protection and Electronic Documents Act (PIPEDA) went into effect . The changes require domestic and foreign organizations, such as the Bank, subject to PIPEDA to: (a) notify individuals impacted by privacy breaches; (b) report privacy breaches to the Office of the Privacy Commissioner of Canada and others in certain circumstances; and (c) keep certain records of privacy breaches. The impact to the Bank is not expected to be significant.

Regulatory Initiatives Impacting Financial Services in Canada

The federal government plans to introduce this year a comprehensive consumer protection framework into the Bank Act which will afford additional protections to consumers and will also enhance the mandate and powers of the Financial Consumer Agency of Canada (FCAC), which is the consumer protection regulator for federally regulated entities Federal regulatory agencies continue to focus on sales practices at Canadian banks. In addition, the FCAC's new Supervisory Framework came into effect on October 1, 2018. The Framework outlines the principles and processes that underpin how the FCAC fulfills its supervision mandate, to promote, monitor and enforce market conduct obligations.

Provincial consumer protection initiatives are also being monitored to assess their possible implications from a financial services perspective. The federal government introduced legislative amendments in the 2018 Budget Implementation Act which are designed to provide greater flexibility for financial institutions to undertake and leverage broader financial technology activities and investments. Specifically, banks will be afforded greater flexibility in regard to referrals/networking, identification, authentication and verification services, permitted investments, and the ability to engage in certain financial technology activities without ministerial consent.

The relevant amendments to the Bank Act itself were given royal assent on June 21, 2018, although the pursuant regulations are not yet drafted, and are likely to be subject to a series of consultations before their final publication.

Basel Committee on Banking Supervision – Finalized Basel III reforms

In December 2017, the Group of Governors and Heads of Supervision (GHOS), the oversight body of the Basel Committee on Banking Supervision (BCBS), announced that they have agreed on an output floor of 72.5% and have finalized the remaining Basel III reforms.

The final Basel III reform package includes: a revised standardized approach for credit risk; revisions to the internal ratings-based approach for credit risk; revisions to the credit valuation adjustment (CVA) framework, including the removal of the internally modelled approach and the introduction of a revised standardized approach; a revised standardized approach for operational risk, which will replace the existing standardized approaches and the advanced measurement approaches; revisions to the measurement of the leverage ratio and a leverage ratio buffer for global systemically important banks (G-SIBs), which will take the form of a Tier 1 capital buffer set at 50% of a G-SIB's risk-weighted capital buffer; and an aggregate output floor, which will ensure that banks' risk-weighted assets (RWAs) generated by internal models are no lower than 72.5% of RWAs as calculated by the Basel III framework's standardized approaches. Banks will also be required to disclose their RWAs based on these standardized approaches. Implementation of the new Basel III standards will be required in 2022. This includes the Fundamental Review of the Trading Book (FRTB) rules, which represents a delay from 2020. There is a phase-in period for the 72.5% output floor from January 1, 2022 until January 2027.

In July 2018, OSFI issued a discussion paper seeking views from interested stakeholders on its proposed policy direction and its timelines for implementation of the final Basel III reforms in Canada. OSFI supports the changes proposed within the final Basel III reforms and intends to implement them domestically, while also considering the adjustments required to recognize the unique characteristics of the Canadian market, improving risk sensitivity and providing the right incentives, while promoting the safety and soundness of deposit taking institutions in consideration of level playing field and competitiveness issues. As part of these adjustments, OSFI is considering eliminating the BCBS' transitional provisions for the output floor, setting the output floor at 72.5% commencing the first quarter of 2022. Responses to the questions raised within the discussion paper were due to OSFI by October 19, 2018. The Bank will continue to monitor and prepare for developments impacting regulatory capital requirements.

Regulatory Capital Pillar 3 Disclosure Requirements

In February 2018, the Basel Committee on Banking Supervision (BCBS) issued an update to its Pillar 3 disclosure requirements framework, as the third phase of the Committee's disclosure project, which builds on the first and second phases, published by the Committee in January 2015 and March 2017, respectively. The third phase is primarily to address changes in disclosure requirements from the Basel III reforms finalized in December 2017, as well as other disclosure requirements related to asset encumbrance, capital distribution constraints, and the scope of disclosure requirements across resolution groups.

The Bank's supplementary regulatory capital disclosures as at October 31, 2018 meet OSFI's April 2017 disclosure guideline for the Committee's first phase of the revised Pillar 3 disclosure requirements. OSFI's disclosure guidelines for the implementation of the second and third phases of the Committee disclosure project are awaited.

In May 2018, OSFI issued its disclosure guidelines on Total Loss Absorbing Capacity (TLAC) Disclosure Requirements and Capital Disclosure Requirements (formerly the advisory entitled Public Capital Disclosure Requirements related to Basel III Pillar 3). Together, these guidelines are a key element of a TLAC regime designed to ensure Canada's largest banks maintain a minimum capacity to absorb losses and enhance stability within the financial sector. These disclosure guidelines are effective for quarterly reporting commencing the first quarter of 2019.

Regulatory developments relating to liquidity

The Net Stable Funding Ratio (NSFR) is expected to become a minimum standard in OSFI's liquidity framework. The NSFR is aimed at reducing structural funding risk by requiring banks to fund their activities with sufficiently stable sources of funding. OSFI has extended the targeted implementation timeline of the NSFR to January 2020.

Benchmark rate reform

In 2014, the Financial Stability Board and Financial Stability Oversight Council wrote a paper 'Reforming Major Interest Rate Benchmarks' recommending the reform or replacement of major interest rate reference rates, particularly interbank offered rates such as LIBOR, EURIBOR and TIBOR. In July 2017, the Financial Conduct Authority in the UK announced it would no longer compel panel banks to make submissions to LIBOR beyond the end of 2021, setting a broad timeline for transition to replacement rates. Europe and Japan have taken steps to either reform or replace EURIBOR and TIBOR, respectively.

The impact is expected to be broad-ranging, affecting derivatives, floating-rate notes, loans, securitizations and mortgages. Firms are working with trade associations and working groups to develop contract language and transition methodology to minimize the financial impact of the change. The Bank is actively participating in industry consultations, raising awareness internally across business lines and working on detailed impact analysis and exposure reports

Related Party Transactions

Compensation of key management personnel

Key management personnel are those persons having authority and responsibility for planning, directing and controlling the activities of the Bank, directly or indirectly, and comprise the directors of the Bank, the President and Chief Executive Officer, certain direct reports of the President and Chief Executive Officer and Group Heads.

T55 Compensation of the Bank key management personnel

For the year ended October 31 ($ millions)	2018	2017
Salaries and cash incentives(1)	**$ 18**	$ 17
Equity-based payment(2)	**27**	25
Pension and other benefits(1)	**4**	3
Total	**$ 49**	$ 45

(1)Expensed during the year.
(2)Awarded during the year.

Directors can use some or all of their director fees earned to buy common shares of the Bank at market rates through the Director's Share Purchase Plan. Non-officer directors may elect to receive all or a portion of their fees in the form of deferred stock units which vest immediately. Refer to Note 26 – Share-based payments for further details of these plans.

T56 Loans and deposits of key management personnel

Loans are currently granted to key management personnel at market terms and conditions.

As at October 31 ($ millions)	2018	2017
Loans	**$ 13**	$ 6
Deposits	**$ 6**	$ 8

The Bank's committed credit exposure to companies controlled by directors totaled $132.4 million as at October 31, 2018 (October 31, 2017 – $145.2 million) while actual utilized accounts were $23.9 million (October 31, 2017 – $11.5 million).

Transactions with associates and joint ventures

In the ordinary course of business, the Bank provides normal banking services and enters into transactions with its associated and other related corporations on terms similar to those offered to non-related parties. If these transactions are eliminated on consolidation, they are not disclosed as related party transactions. Transactions between the Bank and its associated companies and joint ventures also qualify as related party transactions and are as follows:

T57 Transactions with associates and joint ventures

As at and for the year ended October 31 ($ millions)	2018	2017
Net income / (loss)	**$ (64)**	$ (46)
Loans	**702**	703
Deposits	**151**	217
Guarantees and commitments	**$ 123**	$ 114

Scotiabank principal pension plan

The Bank manages assets of $3.8 billion (October 31, 2017 – $3.0 billion) which is a portion of the Scotiabank principal pension plan assets and earned $5.0 million (October 31, 2017 – $3.7 million) in fees.

Oversight and governance

The oversight responsibilities of the Audit and Conduct Review Committee (ACRC) with respect to related party transactions include reviewing policies and practices for identifying transactions with related parties that may materially affect the Bank, and reviewing the procedures for ensuring compliance with the Bank Act for related party transactions. The Bank Act requirements encompass a broader definition of related party transactions than is set out in IFRS. The Bank has various procedures in place to ensure that related party information is identified and reported to the ACRC on a semi-annual basis. The ACRC is provided with detailed reports that reflect the Bank's compliance with its established procedures.

The Bank's Internal Audit department carries out audit procedures as necessary to provide the ACRC with reasonable assurance that the Bank's policies and procedures to identify, authorize and report related party transactions are appropriately designed and operating effectively.

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SUPPLEMENTARY DATA

Geographic Information

T58 Net income by geographic segment

For the fiscal years ($ millions)	2018(1)								2017(2)								2016(2)							
	Canada	**U.S.**	**Mexico**	**Peru**	**Chile**	**Colombia**	**Other International**	**Total**	Canada	U.S.	Mexico	Peru	Chile	Colombia	Other International	Total	Canada	U.S.	Mexico	Peru	Chile	Colombia	Other International	Total
Net interest income	**$ 7,823**	**$691**	**$ 1,561**	**$1,378**	**$1,117**	**$ 839**	**$ 2,825**	**$16,234**	$ 7,440	$460	$1,380	$1,287	$817	$ 710	$ 2,999	$15,093	$ 7,022	$479	$1,224	$1,231	$763	$ 674	$ 2,950	$14,343
Non-interest income	**7,040**	**843**	**613**	**662**	**565**	**484**	**2,612**	**12,819**	6,924	830	536	635	409	455	2,502	12,291	6,893	871	554	600	325	419	2,409	12,071
Provision for credit losses	**802**	**(34)**	**239**	**351**	**498**	**511**	**244**	**2,611**	906	(14)	193	329	145	337	353	2,249	876	112	225	315	113	320	401	2,362
Non-interest expenses	**7,591**	**701**	**1,196**	**770**	**837**	**723**	**3,148**	**14,966**	7,650	606	1,123	762	630	620	3,069	14,460	7,339	633	1,121	740	605	550	3,036	14,024
Income tax expense	**1,596**	**220**	**76**	**235**	**51**	**39**	**451**	**2,668**	1,066	147	125	225	77	71	506	2,217	1,235	155	69	201	45	89	497	2,291
Subtotal	**4,874**	**647**	**663**	**684**	**296**	**50**	**1,594**	**8,808**	4,742	551	475	606	374	137	1,573	8,458	4,465	450	363	575	325	134	1,425	7,737
Net income attributable to non-controlling interests in subsidiaries	**–**	**–**	**17**	**12**	**28**	**16**	**103**	**176**	–	–	12	11	53	60	102	238	–	–	9	12	38	93	99	251
Total	**$ 4,874**	**$647**	**$ 646**	**$ 672**	**$ 268**	**$ 34**	**$ 1,491**	**$ 8,632**	$ 4,742	$551	$ 463	$ 595	$321	$ 77	$ 1,471	$ 8,220	$ 4,465	$450	$ 354	$ 563	$287	$ 41	$ 1,326	$ 7,486
Corporate adjustments								**(84)**								(215)								(369)
Net income attributable to equity holders of the Bank								**$ 8,548**								$ 8,005								$ 7,117

(1) Amounts presented are on a reported basis. Adjusting for the impact of Acquisition-related costs, net income attributable to equity holders of the Bank in 2018 for Canada was $4,926, Chile was $439, and Colombia was $97. Refer to Acquisition-related costs in Non-GAAP measures.

(2) Amounts presented are on a reported basis. Adjusting for the impact of Acquisition-related costs, net income attributable to equity holders of the Bank was $8,065 in 2017, and it was $7,471 in 2016. Refer to Acquisition-related costs in Non-GAAP measures.

T59 Loans and acceptances by geography (1)

	IFRS 9	IAS 39	
As at October 31 ($ billions)	**2018**	2017	2016
Canada			
Atlantic provinces	**$ 21.9**	$ 22.7	$ 26.7
Quebec	**29.3**	29.0	29.7
Ontario	**185.7**	173.6	156.7
Manitoba and Saskatchewan	**17.3**	17.1	17.0
Alberta	**52.8**	51.9	50.8
British Columbia	**60.5**	55.6	47.6
	367.5	349.9	328.5
U.S.	**41.8**	36.9	38.5
Mexico	**27.5**	24.2	20.8
Peru	**20.1**	18.4	17.8
Chile	**43.8**	22.8	19.4
Colombia	**11.6**	9.4	9.3
Other International			
Latin America	**8.8**	6.6	6.4
Europe	**9.4**	10.0	8.4
Caribbean and Central America	**31.1**	31.4	32.6
Asia and Other	**11.6**	12.6	15.0
	60.9	60.6	62.4
	$ 573.2	$ 522.2	$ 496.7
Total allowance for loan losses	**(5.1)**	(4.3)	(4.6)
Total loans and acceptances net of allowance for loan losses	**$ 568.1**	$ 517.9	$ 492.1

(1) The amounts for the year 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Note 3 and 4 in the consolidated financial statements).

T60 Gross impaired loans by geographic segment

As at October 31 ($ millions)	2018	2017(1)	2016(1)
Canada	**$ 999**	$ 1,049	$ 1,258
U.S.	**80**	140	210
Mexico	**359**	303	301
Peru	**581**	704	764
Chile	**753**	565	499
Colombia	**619**	462	381
Other International	**1,739**	1,642	1,981
Total	**$ 5,130**	$ 4,865	$ 5,394

(1) Excludes loans acquired under the Federal Deposit Insurance Corporation (FDIC) guarantee related to the acquisition of R-G Premier Bank of Puerto Rico, for periods prior to 2018.

T61 Provision against impaired loans by geographic segment (1)

For the fiscal years ($ millions)	2018	2017	2016
Canada	**$ 785**	$ 906	$ 876
U.S.	**(6)**	(14)	112
Mexico	**239**	193	224
Peru	**349**	329	317
Chile	**275**	145	112
Colombia	**358**	337	320
Other International	**355**	353	401
Total	**$ 2,355**	$ 2,249	$ 2,362

(1) The amounts for the year 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Note 3 and 4 in the consolidated financial statements).

T62 Cross–border exposure to select countries (1)

As at October 31 ($ millions)	Loans	Trade	Interbank deposits	Government and other securities	Investment in subsidiaries and affiliates	Other	2018 Total	2017 Total
Asia								
China	$ 1,478	$ 1,947	$ 333	$ 87	$ 828	$ 41	**$ 4,714**	$ 4,367
India	1,489	163	–	–	–	20	**1,672**	2,254
Thailand	101	17	527	–	2,991	4	**3,640**	3,461
South Korea	650	37	–	–	–	38	**725**	968
Hong Kong	1,684	86	9	–	–	34	**1,813**	1,465
Malaysia	179	1	–	–	321	–	**501**	582
Japan	512	34	178	4,888	–	13	**5,625**	5,014
Others(2)	1,629	154	150	–	–	20	**1,953**	1,371
Total	$ 7,722	$ 2,439	$ 1,197	$ 4,975	$ 4,140	$ 170	**$ 20,643**	$ 19,482
Latin America								
Chile	$ 3,374	$ 1,106	$ 1,921	$ 155	$ 5,161	$ 248	**$ 11,965**	$ 8,345
Mexico	2,483	355	–	578	3,942	175	**7,533**	6,901
Brazil	5,513	1,143	–	14	390	536	**7,596**	5,317
Peru	2,425	93	–	143	4,928	22	**7,611**	7,080
Colombia	1,310	171	–	–	1,561	8	**3,050**	2,982
Others(3)	134	11	–	–	532	–	**677**	678
Total	$ 15,239	$ 2,879	$ 1,921	$ 890	$ 16,514	$ 989	**$ 38,432**	$ 31,303
Caribbean and Central America								
Panama	$ 4,364	$ 109	$ 58	$ –	$ 319	$ –	**$ 4,850**	$ 4,329
Costa Rica	1,793	130	–	–	1,034	14	**2,971**	2,540
El Salvador	391	29	–	–	693	–	**1,113**	1,270
Dominican Republic	1,132	22	28	–	–	–	**1,182**	1,222
Jamaica	58	18	–	–	879	–	**955**	785
Others(4)	1,493	65	–	–	425	–	**1,983**	2,030
Total	$ 9,231	$ 373	$ 86	$ –	$ 3,350	$ 14	**$ 13,054**	$ 12,176
As at October 31, 2018	**$ 32,192**	**$ 5,691**	**$ 3,204**	**$ 5,865**	**$ 24,004**	**$ 1,173**	**$ 72,129**	
As at October 31, 2017	$ 29,654	$ 4,559	$ 2,213	$ 4,972	$ 20,761	$ 802	$ 62,961	

(1) Cross-border exposure represents a claim, denominated in a currency other than the local one, against a borrower in a foreign country on the basis of ultimate risk.
(2) Includes Indonesia, Macau, Singapore, Vietnam, Taiwan and Turkey.
(3) Includes Venezuela and Uruguay.
(4) Includes other English and Spanish Caribbean countries, such as Bahamas, Barbados, British Virgin Islands, Trinidad & Tobago, Turks & Caicos.

Credit Risk

T63 Loans and acceptances by type of borrower (1)

As at October 31 ($ billions)	2018	2017	2016
Residential mortgages	**$ 253.4**	$ 236.9	$ 222.9
Personal loans	**96.0**	89.2	19.4
Credit cards	**16.5**	14.1	80.1
Personal	**$ 365.9**	$ 340.2	$ 322.4
Financial services			
Non-bank	**$ 24.6**	$ 20.5	$ 16.1
Bank(2)	**4.5**	3.8	3.7
Wholesale and retail	**25.1**	21.1	22.1
Real estate and construction	**29.2**	24.6	22.6
Energy(3)	**14.8**	14.5	14.5
Transportation	**9.3**	8.2	9.0
Automotive	**14.7**	13.0	11.5
Agriculture	**11.5**	10.2	8.8
Hospitality and leisure	**4.0**	3.5	3.5
Mining	**5.5**	4.9	5.4
Metals	**3.0**	2.6	2.5
Utilities	**9.7**	8.1	7.8
Health care	**5.4**	5.6	5.2
Technology and media	**12.3**	9.6	11.8
Chemicals(3)	**1.9**	2.1	2.7
Food and beverage	**7.9**	6.3	4.9
Forest products	**1.9**	1.7	2.5
Other(4)	**16.9**	17.0	14.7
Sovereign(5)	**5.1**	4.7	5.0
Business and government	**$ 207.3**	$ 182.0	$ 174.3
	$ 573.2	$ 522.2	$ 496.7
Total allowance for loan losses	**(5.1)**	(4.3)	(4.6)
Total loans and acceptances net of allowance for loan losses	**$ 568.1**	$ 517.9	$ 492.1

(1) The amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior year amounts have not been restated (refer to Note 3 and 4 in the consolidated financial statements).
(2) Deposit taking institutions and securities firms.
(3) Prior periods have been restated to conform to the current presentation.
(4) Other related to $2.3 in financing products, $2.6 in services and $2.7 in wealth management (2017 – $3.5, $2.2, and $2.3 respectively).
(5) Includes central banks, regional and local governments, and supra-national agencies.

T64 Off-balance sheet credit instruments

As at October 31 ($ billions)	2018	2017	2016
Commitments to extend credit (1)	**$ 197.4**	$ 185.7	$ 174.2
Standby letters of credit and letters of guarantee	**35.4**	35.5	34.5
Securities lending, securities purchase commitments and other	**53.7**	42.0	40.0
Total	**$ 286.5**	$ 263.2	$ 248.7

(1) Excludes commitments which are unconditionally cancellable at the Bank's discretion at any time.

T65 Changes in net impaired loans (1)

For the fiscal years ($ millions)	2018	2017	2016
Gross impaired loans			
Balance at beginning of year	**$ 5,070**	$ 5,394	$ 4,658
Net additions			
New additions	**3,871**	4,297	4,684
Acquisition-related	**233**	–	–
Declassifications	**(168)**	(42)	(24)
Payments	**(722)**	(1,427)	(1,344)
Sales	**(72)**	(50)	(95)
	3,142	2,778	3,221
Write-offs			
Residential mortgages	**(219)**	(170)	(201)
Personal loans	**(1,441)**	(1,478)	(1,279)
Credit cards	**(1,104)**	(1,024)	(671)
Business and government	**(276)**	(501)	(428)
	(3,040)	(3,173)	(2,579)
Foreign exchange and other	**(42)**	(134)	94
Balance at end of year	**$ 5,130**	$ 4,865	$ 5,394
Allowance for credit losses on impaired loans (2)			
Balance at beginning of year	**$ 1,756**	$ 2,948	$ 2,573
Provision for credit losses	**2,355**	2,249	2,362
Write-offs	**(3,040)**	(3,173)	(2,579)
Recoveries			
Residential mortgages	**96**	70	20
Personal loans	**275**	252	305
Credit cards	**250**	303	217
Business and government	**68**	55	40
	689	680	582
Foreign exchange and other	**(83)**	(82)	10
Balance at end of year	**$ 1,677**	$ 2,622	$ 2,948
Net impaired loans			
Balance at beginning of year	**$ 3,314**	$ 2,446	$ 2,085
Net change in gross impaired loans	**60**	(529)	736
Net change in allowance for credit losses on impaired loans	**79**	326	(375)
Balance at end of year	**$ 3,453**	$ 2,243	$ 2,446

(1) Excludes loans acquired under the Federal Deposit Insurance Corporation (FDIC) guarantee related to the acquisition of R-G Premier Bank of Puerto Rico, prior to 2018.
(2) The amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior year amounts have not been restated (refer to Note 3 and 4 in the consolidated financial statements).

T66 Provision for credit losses (1)

For the fiscal years ($ millions)	2018
New provisions	**$ 3,267**
Reversals	**(223)**
Recoveries	**(689)**
Provision for credit losses on impaired loans (Stage 3)	**2,355**
Provision for credit losses – performing (Stage 1 and 2)	**256**
Total Provision for credit losses	**$ 2,611**

(1) The amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior year amounts have not been restated (refer to Note 3 and 4 in the consolidated financial statements).

For the fiscal years ($ millions)	2017	2016
New provisions	$ 3,057	$ 3,072
Reversals	(128)	(110)
Recoveries	(680)	(600)
Net provisions for credit losses on impaired loans	2,249	2,362
Collective provision (reversals) on performing loans	–	50
Total Provision for credit losses	$ 2,249	$ 2,412

(1) The amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior year amounts have not been restated (refer to Note 3 and 4 in the consolidated financial statements).

T67 Provision for credit losses against impaired loans by type of borrower

For the fiscal years ($ millions)	2018	2017	2016
Residential mortgages	**$ 91**	$ 61	$ 100
Personal loans	**1,198**	1,152	1,075
Credit cards	**833**	734	602
Personal	**2,122**	1,947	1,777
Financial services			
Non-bank	**1**	10	(1)
Bank	**–**	1	2
Wholesale and retail	**92**	63	61
Real estate and construction	**48**	62	34
Energy	**(33)**	(8)	290
Transportation	**8**	20	45
Automotive	**9**	8	28
Agriculture	**15**	14	14
Hospitality and leisure	**(5)**	14	25
Mining	**(1)**	2	6
Metals	**(7)**	46	11
Utilities	**20**	12	20
Health care	**12**	7	9
Technology and media	**7**	(1)	14
Chemicals	**1**	(1)	(7)
Food and beverage	**17**	18	6
Forest products	**5**	3	1
Other	**(6)**	31	23
Sovereign	**50**	1	4
Business and government	**233**	302	585
Provision for credit losses on impaired loans	**$ 2,355**	$ 2,249	$ 2,362

T68 Impaired loans by type of borrower

	2018			2017(1)		
As at October 31 ($ millions)	**Gross**	**Allowance for credit losses**	**Net**	Gross	Allowance for credit losses	Net
Residential mortgages	**$ 1,797**	**$ 360**	**$ 1,437**	$ 1,445	$ 326	$ 1,119
Personal loans	**1,069**	**644**	**425**	1,067	1,040	27
Credit cards	**–**	**–**	**–**	543	543	–
Personal	**$ 2,866**	**$ 1,004**	**$ 1,862**	$ 3,055	$ 1,909	$ 1,146
Financial services						
Non-bank	**19**	**13**	**6**	31	20	11
Bank	**2**	**2**	**–**	2	2	–
Wholesale and retail	**390**	**168**	**222**	242	132	110
Real estate and construction	**469**	**112**	**357**	257	115	142
Energy	**135**	**30**	**105**	265	77	188
Transportation	**233**	**60**	**173**	181	73	108
Automotive	**50**	**16**	**34**	20	7	13
Agriculture	**150**	**50**	**100**	55	30	25
Hospitality and leisure	**37**	**1**	**36**	41	7	34
Mining	**25**	**5**	**20**	11	5	6
Metals	**48**	**17**	**31**	107	27	80
Utilities	**51**	**22**	**29**	280	61	219
Health care	**76**	**19**	**57**	52	26	26
Technology and media	**21**	**5**	**16**	7	5	2
Chemicals	**10**	**3**	**7**	4	3	1
Food and beverage	**99**	**50**	**49**	95	35	60
Forest products	**27**	**7**	**20**	22	8	14
Other	**159**	**78**	**81**	123	74	49
Sovereign	**263**	**15**	**248**	15	6	9
Business and government	**$ 2,264**	**$ 673**	**$ 1,591**	$ 1,810	$ 713	$ 1,097
Total	**$ 5,130**	**$ 1,677**	**$ 3,453**	**$ 4,865**	**$ 2,622**	**$ 2,243**

(1) Excludes loans acquired under the Federal Deposit Insurance Corporation (FDIC) guarantee related to the acquisition of R-G Premier Bank of Puerto Rico.

T69 Total credit risk exposures by geography (1)(2)

	2018					2017
	Non-Retail					
As at October 31 ($ millions)	Drawn	Undrawn	Other exposures(3)	Retail	Total	Total
Canada	$ 101,207	$ 41,691	$ 37,748	$ 341,157	$ 521,803	$ 502,224
U.S.	102,265	33,103	42,771	–	178,139	157,386
Chile	23,140	1,038	5,066	23,908	53,152	27,190
Mexico	18,714	1,339	2,611	10,630	33,294	30,528
Peru	15,686	1,506	2,992	8,311	28,495	28,733
Colombia	5,233	486	434	7,496	13,649	10,859
Other International						
Europe	25,357	7,041	10,215	–	42,613	43,030
Caribbean and Central America	17,712	1,676	910	18,004	38,302	39,358
Latin America (other)	9,532	909	227	700	11,368	9,035
Other	22,647	3,514	2,258	–	28,419	30,070
Total	$ 341,493	$ 92,303	$ 105,232	$ 410,206	$ 949,234	$ 878,413
As at October 31, 2017	$ 309,282	$ 84,893	$ 102,373	$ 381,865	$ 878,413	

(1) Geographic segmentation is based upon the location of the ultimate risk of the credit exposure. Includes all credit risk portfolios and excludes equities and other assets.
(2) Amounts represent exposure at default.
(3) Includes off-balance sheet lending instruments such as letters of credit, letters of guarantee, derivatives, securitization and repo-style transactions after collateral.

T70 AIRB credit risk exposures by maturity (1)(2)

	2018				2017
Residual maturity as at October 31 ($ millions)	Drawn	Undrawn	Other exposures(3)	Total	Total
Non-retail					
Less than 1 year	$ 145,558	$ 25,264	$ 64,808	$ 235,630	$ 213,124
One to 5 years	119,182	59,726	29,892	208,800	192,087
Over 5 years	9,228	1,809	6,581	17,618	23,217
Total non-retail	$ 273,968	$ 86,799	$ 101,281	$ 462,048	$ 428,428
Retail					
Less than 1 year	$ 31,406	$ 19,535	$ –	$ 50,941	$ 51,045
One to 5 years	188,922	–	–	188,922	178,940
Over 5 years	15,259	–	–	15,259	16,299
Revolving credits(4)	39,917	28,550	–	68,467	66,027
Total retail	$ 275,504	$ 48,085	$ –	$ 323,589	$ 312,311
Total	$ 549,472	$ 134,884	$ 101,281	$ 785,637	$ 740,739
As at October 31, 2017	$ 518,255	$ 123,443	$ 99,041	$ 740,739	

(1) Remaining term to maturity of the credit exposure. Includes all credit risk portfolios and excludes equity securities and other assets.
(2) Exposure at default, before credit risk mitigation.
(3) Off-balance sheet lending instruments, such as letters of credit, letters of guarantee, securitization, derivatives and repo-style transactions after collateral.
(4) Credit cards and lines of credit with unspecified maturity.

T71 Total credit risk exposures and risk-weighted assets

As at October 31 ($ millions)	2018 AIRB Exposure at Default(2)	2018 AIRB CET1 risk-weighted assets(3)	2018 Standardized(1) Exposure at Default(2)	2018 Standardized(1) CET1 risk-weighted assets(3)	2018 Total Exposure at Default(2)	2018 Total CET1 risk-weighted assets(3)	2017 Total Exposure at Default(2)	2017 Total CET1 risk-weighted assets(3)
Non-retail								
Corporate								
Drawn	$ 145,000	$ 70,750	$ 59,018	$ 56,897	$ 204,018	$ 127,647	$ 183,262	$ 114,622
Undrawn	83,885	31,103	5,313	5,273	89,198	36,376	81,214	34,473
Other(4)	43,440	10,590	3,501	3,430	46,941	14,020	44,190	15,431
	272,325	112,443	67,832	65,600	340,157	178,043	308,666	164,526
Bank								
Drawn	22,680	3,648	3,208	2,715	25,888	6,363	22,223	6,115
Undrawn	2,146	287	160	159	2,306	446	2,656	477
Other(4)	9,846	1,112	143	80	9,989	1,192	9,132	1,623
	34,672	5,047	3,511	2,954	38,183	8,001	34,011	8,215
Sovereign								
Drawn	106,288	3,524	5,299	1,424	111,587	4,948	103,797	4,665
Undrawn	768	95	31	16	799	111	1,023	299
Other(4)	1,806	94	6	2	1,812	96	977	26
	108,862	3,713	5,336	1,442	114,198	5,155	105,797	4,990
Total Non-retail								
Drawn	273,968	77,922	67,525	61,036	341,493	138,958	309,282	125,402
Undrawn	86,799	31,485	5,504	5,448	92,303	36,933	84,893	35,249
Other(4)	55,092	11,796	3,650	3,512	58,742	15,308	54,299	17,080
	$ 415,859	$ 121,203	$ 76,679	$ 69,996	$ 492,538	$ 191,199	$ 448,474	$ 177,731
Retail								
Retail residential mortgages								
Drawn	$ 205,944	$ 17,259	$ 44,517	$ 18,592	$ 250,461	$ 35,851	$ 234,620	$ 30,024
	205,944	17,259	44,517	18,592	250,461	35,851	234,620	30,024
Secured lines of credit								
Drawn	21,047	3,639	–	–	21,047	3,639	20,281	3,351
Undrawn	17,864	1,081	–	–	17,864	1,081	15,356	917
	38,911	4,720	–	–	38,911	4,720	35,637	4,268
Qualifying retail revolving exposures								
Drawn	17,337	9,993	–	–	17,337	9,993	16,939	9,676
Undrawn	28,550	3,470	–	–	28,550	3,470	27,445	3,291
	45,887	13,463	–	–	45,887	13,463	44,384	12,967
Other retail								
Drawn	31,176	14,876	42,100	30,826	73,276	45,702	65,924	40,318
Undrawn	1,671	476	–	–	1,671	476	1,300	311
	32,847	15,352	42,100	30,826	74,947	46,178	67,224	40,629
Total retail								
Drawn	275,504	45,767	86,617	49,418	362,121	95,185	337,764	83,369
Undrawn	48,085	5,027	–	–	48,085	5,027	44,101	4,519
	$ 323,589	$ 50,794	$ 86,617	$ 49,418	$ 410,206	$ 100,212	$ 381,865	$ 87,888
Securitization exposures	23,346	2,287	–	–	23,346	2,287	23,591	2,529
Trading derivatives	22,843	7,594	301	301	23,144	7,895	24,483	7,147
CVA derivatives	–	3,537	–	1,079	–	4,616	–	2,988
Subtotal	$ 785,637	$ 185,415	$ 163,597	$ 120,794	$ 949,234	$ 306,209	$ 878,413	$ 278,283
Equities	1,754	1,619	–	–	1,754	1,619	1,281	1,188
Other assets(5)	–	–	60,124	28,258	60,124	28,258	50,631	25,201
Total credit risk, before scaling factor	$ 787,391	$ 187,034	$ 223,721	$ 149,052	$ 1,011,112	$ 336,086	$ 930,325	$ 304,672
Add-on for 6% scaling factor(6)	–	11,010	–	–	–	11,010	–	10,487
Total credit risk	$ 787,391	$ 198,044	$ 223,721	$ 149,052	$ 1,011,112	$ 347,096	$ 930,325	$ 315,159

(1) Net of specific allowances for credit losses.
(2) Outstanding amount for on-balance sheet exposures and loan equivalent amount for off-balance sheet exposures, before credit risk mitigation.
(3) As at October 31, 2018, CVA risk-weighted assets were calculated using scalars of 0.80, 0.83, and 0.86 for the CET1, Tier 1 and Total capital ratios, respectively (scalars of 0.72, 0.77, and 0.81 in 2017).
(4) Other exposures include off-balance sheet lending instruments, such as letters of credit, letters of guarantee, non-trading derivatives and repo-style exposures, after collateral.
(5) Exposures at Default for Other Assets exclude amounts related to central counterparties.
(6) Basel Committee imposed a scaling factor (6%) on risk-weighted assets for Internal Ratings-Based credit risk portfolios.

Revenues and Expenses

T72 Volume/rate analysis of change in net interest income

	Increase (decrease) due to change in: 2018 versus 2017			Increase (decrease) due to change in: 2017 versus 2016		
($ millions)	**Average volume**	**Average rate**	**Net change**	Average volume	Average rate	Net change
Net interest income						
Total earning assets	**$ 1,645**	**$ 2,495**	**$ 4,140**	$ 785	$ 1,152	$ 1,937
Total interest-bearing liabilities	**408**	**2,576**	**2,984**	29	1,165	1,194
Change in net interest income	**$ 1,237**	**$ (81)**	**$ 1,156**	$ 756	$ (13)	$ 743
Assets						
Deposits with banks	**$ 10**	**$ 327**	**$ 337**	$ (85)	$ 213	$ 128
Trading assets	**(7)**	**34**	**27**	–	(28)	(28)
Securities purchased under resale agreements	**(8)**	**171**	**163**	(5)	129	124
Investment securities	**85**	**256**	**341**	109	85	194
Loans:						
Residential mortgages	**513**	**411**	**924**	326	(327)	(1)
Personal loans	**281**	**432**	**713**	149	122	271
Credit cards	**300**	**(42)**	**258**	166	85	251
Business and government	**471**	**906**	**1,377**	125	873	998
Total loans	**1,565**	**1,707**	**3,272**	766	753	1,519
Total earning assets	**$ 1,645**	**$ 2,495**	**$ 4,140**	$ 785	$ 1,152	$ 1,937
Liabilities						
Deposits:						
Personal	**$ 131**	**$ 471**	**$ 602**	$ 106	$ 156	$ 262
Business and government	**316**	**1,517**	**1,833**	(101)	937	836
Banks	**1**	**230**	**231**	(7)	82	75
Total deposits	**448**	**2,218**	**2,666**	(2)	1,175	1,173
Obligations related to securities sold under repurchase agreements	**(13)**	**43**	**30**	6	13	19
Subordinated debentures	**(43)**	**30**	**(13)**	(12)	6	(6)
Other interest-bearing liabilities	**16**	**285**	**301**	37	(29)	8
Total interest-bearing liabilities	**$ 408**	**$ 2,576**	**$ 2,984**	$ 29	$ 1,165	$ 1,194

T73 Provision for income taxes

For the fiscal years ($ millions)	**2018**	2017	2016	**2018 versus 2017**
Income taxes				
Income tax expense	**$ 2,382**	$ 2,033	$ 2,030	**17%**
Other taxes				
Payroll taxes	**390**	380	347	**3**
Business and capital taxes	**464**	423	403	**10**
Harmonized sales tax and other	**437**	412	363	**6**
Total other taxes	**1,291**	1,215	1,113	**6**
Total income and other taxes (1)	**$ 3,673**	$ 3,248	$ 3,143	**13%**
Net income before income taxes	**$ 11,106**	$ 10,276	$ 9,398	**8%**
Effective income tax rate (%)	**21.5**	19.8	21.6	**1.7**
Total tax rate (%) (2)	**29.6**	28.3	29.9	**1.3**

(1) Comprising $2,218 of Canadian taxes (2017 – $1,758; 2016 – $1,742) and $1,455 of foreign taxes (2017 – $1,490; 2016 – $1,401).
(2) Total income and other taxes as a percentage of net income before income and other taxes.

T74 Assets under administration and management

($ billions)	2018	2017	2016
Assets under administration			
Personal			
Retail brokerage	**$ 146.5**	$ 151.7	$ 163.5
Investment management and trust	**113.9**	107.0	106.4
	260.4	258.7	269.9
Mutual funds	**187.5**	148.3	139.2
Institutional	**68.1**	63.2	63.7
Total	**$ 516.0**	$ 470.2	$ 472.8
Assets under management			
Personal	**$ 54.7**	$ 51.8	$ 47.9
Mutual funds	**173.0**	134.0	125.1
Institutional	**54.5**	20.9	19.7
Total	**$ 282.2**	$ 206.7	$ 192.7

T75 Changes in assets under administration and management

As at October 31 ($ billions)	2018	2017	2016
Assets under administration			
Balance at beginning of year	**$ 470.2**	$ 472.8	$ 453.9
Net inflows (outflows)(1)	**51.5**	(33.6)	4.3
Impact of market changes, including foreign currency translation	**(5.7)**	31.0	14.6
Balance at end of year	**$ 516.0**	$ 470.2	$ 472.8

(1) Includes impact of business acquisitions/dispositions of $49.2 (2017 – $(33.5); 2016 – nil).

As at October 31 ($ billions)	2018	2017	2016
Assets under management			
Balance at beginning of year	**$ 206.7**	$ 192.7	$ 179.0
Net inflows (outflows)(1)	**74.4**	3.6	6.6
Impact of market changes, including foreign currency translation	**1.1**	10.4	7.1
Balance at end of year	**$ 282.2**	$ 206.7	$ 192.7

(1) Includes impact of business acquisitions/dispositions of $76.0 (2017 – $(4.3); 2016 – nil).

T76 Fees paid to the shareholders' auditors

For the fiscal years ($ millions)	2018	2017	2016
Audit services	**$ 28.9**	$ 28.5	$ 26.1
Audit-related services	**0.8**	0.8	0.7
Tax services outside of the audit scope	**–**	–	–
Other non-audit services	**0.4**	0.4	0.4
Total	**$ 30.1**	$ 29.7	$ 27.2

Selected Quarterly Information

T77 Selected quarterly information

	2018(1)				2017			
As at and for the quarter ended	**Q4**	**Q3**	**Q2**	**Q1**	Q4	Q3	Q2	Q1
Operating results ($ millions)								
Net interest income	**4,220**	**4,085**	**3,950**	**3,936**	3,831	3,833	3,728	3,643
Non-interest income	**3,228**	**3,096**	**3,108**	**3,152**	2,981	3,061	2,853	3,225
Total revenue	**7,448**	**7,181**	**7,058**	**7,088**	6,812	6,894	6,581	6,868
Provision for credit losses	**590**	**943**	**534**	**544**	536	573	587	553
Non-interest expenses	**4,064**	**3,770**	**3,726**	**3,498**	3,668	3,672	3,601	3,689
Income tax expense	**523**	**529**	**621**	**709**	538	546	332	617
Net income	**2,271**	**1,939**	**2,177**	**2,337**	2,070	2,103	2,061	2,009
Net income attributable to common shareholders	**2,114**	**1,956**	**2,042**	**2,249**	1,986	2,016	1,965	1,909
Operating performance								
Basic earnings per share ($)	**1.72**	**1.60**	**1.70**	**1.88**	1.66	1.68	1.63	1.58
Diluted earnings per share ($)	**1.71**	**1.55**	**1.70**	**1.86**	1.64	1.66	1.62	1.57
Return on equity (%)	**13.8**	**13.1**	**14.9**	**16.2**	14.5	14.8	14.9	14.3
Productivity ratio (%)	**54.6**	**52.5**	**52.8**	**49.3**	53.8	53.3	54.7	53.7
Core banking margin (%)(2)	**2.47**	**2.46**	**2.47**	**2.46**	2.44	2.46	2.54	2.40
Financial position information ($ billions)								
Cash and deposits with financial institutions	**62.3**	**51.9**	**61.8**	**57.4**	59.7	57.8	50.9	48.4
Trading assets	**100.3**	**92.9**	**99.7**	**105.7**	98.5	105.1	111.8	106.5
Loans	**551.8**	**548.6**	**517.9**	**503.2**	504.4	498.6	496.3	477.4
Total assets	**998.5**	**946.7**	**926.3**	**923.2**	915.3	906.3	921.6	887.0
Deposits	**676.5**	**654.2**	**640.6**	**635.8**	625.4	618.1	628.2	604.7
Common equity	**61.0**	**60.8**	**57.3**	**55.1**	55.5	53.4	55.1	53.0
Preferred shares and other equity instruments	**4.2**	**4.2**	**4.2**	**4.6**	4.6	3.0	3.0	3.2
Assets under administration	**516.0**	**483.2**	**471.8**	**470.9**	470.2	481.1	494.2	469.6
Assets under management	**282.2**	**254.8**	**213.1**	**210.8**	206.7	201.3	205.0	194.0
Capital and liquidity measures								
Common Equity Tier 1 (CET1) capital ratio (%)	**11.1**	**11.4**	**12.0**	**11.2**	11.5	11.3	11.3	11.3
Tier 1 capital ratio (%)	**12.5**	**12.8**	**13.5**	**12.7**	13.1	12.6	12.5	12.6
Total capital ratio (%)	**14.3**	**14.5**	**15.3**	**14.6**	14.9	14.8	14.7	14.8
Leverage ratio (%)	**4.5**	**4.9**	**4.8**	**4.6**	4.7	4.4	4.4	4.5
CET1 risk-weighted assets ($ billions) (3)	**400.5**	**411.4**	**375.9**	**382.2**	376.4	365.4	374.9	359.6
Liquidity coverage ratio (LCR) (%)	**124**	**125**	**127**	**128**	125	125	126	132
Credit quality								
Net impaired loans ($ millions) (4)	**3,453**	**3,707**	**3,381**	**3,288**	2,243	2,273	2,510	2,416
Allowance for credit losses ($ millions) (5)	**5,154**	**5,418**	**5,017**	**4,923**	4,327	4,290	4,591	4,508
Net impaired loans as a % of loans and acceptances (4)	**0.60**	**0.65**	**0.63**	**0.63**	0.43	0.44	0.49	0.49
Provision for credit losses as a % of average net loans and acceptances (annualized) (6)	**0.39**	**0.69**	**0.42**	**0.42**	0.42	0.45	0.49	0.45
Provision for credit losses on impaired loans as a % of average net loans and acceptances (annualized)(6)	**0.42**	**0.41**	**0.46**	**0.43**	0.42	0.45	0.49	0.45
Net write-offs as a % of average net loans and acceptances (annualized)	**0.45**	**0.39**	**0.45**	**0.46**	0.44	0.54	0.53	0.49
Adjusted results(2)								
Adjusted net income ($ millions)	**2,345**	**2,259**	**2,190**	**2,350**	2,084	2,117	2,075	2,027
Adjusted diluted earnings per share ($)	**1.77**	**1.76**	**1.71**	**1.87**	1.65	1.68	1.63	1.58
Adjusted return on equity (%)	**14.1**	**14.5**	**15.0**	**16.3**	14.6	14.8	15.0	14.5
Adjusted productivity ratio (%)	**53.2**	**51.8**	**52.5**	**49.1**	53.6	53.0	54.4	53.3
Adjusted provision for credit losses ratio as a % of average net loans and acceptances (6)	**0.39**	**0.40**	**0.42**	**0.42**	0.42	0.45	0.49	0.45
Common share information								
Closing share price ($) (TSX)	**70.65**	**77.09**	**78.92**	**81.72**	83.28	77.67	75.88	77.76
Shares outstanding (millions)								
Average – Basic	**1,230**	**1,223**	**1,198**	**1,199**	1,198	1,200	1,206	1,209
Average – Diluted	**1,246**	**1,240**	**1,203**	**1,215**	1,215	1,219	1,223	1,229
End of period	**1,227**	**1,232**	**1,199**	**1,198**	1,199	1,198	1,202	1,208
Dividends paid per share ($)	**0.85**	**0.82**	**0.82**	**0.79**	0.79	0.76	0.76	0.74
Dividend yield (%)(7)	**4.6**	**4.2**	**4.2**	**3.8**	4.0	4.0	3.9	4.0
Market capitalization ($ billions) (TSX)	**86.7**	**95.0**	**94.6**	**97.9**	99.9	93.1	91.2	94.0
Book value per common share ($)	**49.75**	**49.32**	**47.77**	**45.98**	46.24	44.54	45.86	43.87
Market value to book value multiple	**1.4**	**1.6**	**1.7**	**1.8**	1.8	1.7	1.7	1.8
Price to earnings multiple (trailing 4 quarters)	**10.2**	**11.3**	**11.4**	**11.9**	12.7	12.0	12.0	13.1

(1) The amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Notes 3 and 4 in the consolidated financial statements).
(2) Refer to page 18 for a discussion of non-GAAP measures.
(3) Credit valuation adjustment (CVA) risk-weighted assets were calculated using scalars of 0.80, 0.83 and 0.86 to compute CET1, Tier 1 and Total capital ratios, respectively in 2018 (0.72, 0.77 and 0.81 in 2017).
(4) Excludes loans acquired under the Federal Deposit Insurance Corporation (FDIC) guarantee related to the acquisition of R-G Premier Bank of Puerto Rico, for periods prior to 2018.
(5) Includes allowance for credit losses on all financial assets – loans, acceptances, off-balance sheet exposures, debt securities, and deposits with financial institutions.
(6) Includes provision for credit losses on certain financial assets – loans, acceptances and off-balance sheet exposures.
(7) Based on the average of the high and low common share price for the period.

Eleven-Year Statistical Review

T78 Consolidated Statement of Financial Position

		IFRS						
As at October 31 ($ millions)	**2018(1)**	2017	2016	2015	2014	2013	2012	2011
Assets								
Cash and deposits with financial institutions	**$ 62,269**	$ 59,663	$ 46,344	$ 73,927	$ 56,730	$ 53,338	$ 47,337	$ 38,723
Precious metals	**3,191**	5,717	8,442	10,550	7,286	8,880	12,387	9,249
Trading assets								
Securities	**85,474**	78,652	87,287	78,380	95,363	84,196	74,639	62,192
Loans	**14,334**	17,312	19,421	18,341	14,508	11,225	12,857	13,607
Other	**454**	2,500	1,853	2,419	3,377	1,068	100	–
	100,262	98,464	108,561	99,140	113,248	96,489	87,596	75,799
Financial instruments designated at fair value through profit or loss	**12**	13	221	320	111	106	197	375
Securities purchased under resale agreements and securities borrowed	**104,018**	95,319	92,129	87,312	93,866	82,533	66,189	47,181
Derivative financial instruments	**37,558**	35,364	41,657	41,003	33,439	24,503	30,338	37,322
Investment securities	**78,396**	69,269	72,919	43,216	38,662	34,319	33,376	30,176
Loans								
Residential mortgages	**253,357**	236,916	222,888	217,498	212,648	209,865	175,630	161,685
Personal loans	**96,019**	89,227	86,110	–	–	–	–	–
Credit cards	**16,485**	14,104	13,392	–	–	–	–	–
Personal and credit cards	**–**	–	–	91,477	84,204	76,008	68,277	63,317
Business and government	**191,038**	168,449	162,400	153,850	131,098	119,615	111,648	96,743
	556,899	508,696	484,790	462,825	427,950	405,488	355,555	321,745
Allowance for credit losses	**5,065**	4,327	4,626	4,197	3,641	3,273	2,977	2,689
	551,834	504,369	480,164	458,628	424,309	402,215	352,578	319,056
Other								
Customers' liability under acceptances, net of allowance	**16,329**	13,560	11,978	10,296	9,876	10,556	8,932	8,172
Property and equipment	**2,684**	2,381	2,520	2,286	2,272	2,214	2,218	2,504
Investments in associates	**4,850**	4,586	4,299	4,033	3,461	5,326	4,791	4,434
Goodwill and other intangible assets	**17,719**	12,106	12,141	11,449	10,884	10,704	8,692	7,639
Deferred tax assets	**1,938**	1,713	2,021	2,034	1,763	1,938	2,273	2,214
Other assets	**17,433**	12,749	12,870	12,303	9,759	10,523	11,321	11,579
	60,953	47,095	45,829	42,401	38,015	41,261	38,227	36,542
	$ 998,493	$ 915,273	$ 896,266	$ 856,497	$ 805,666	$ 743,644	$ 668,225	$ 594,423
Liabilities								
Deposits								
Personal	**$ 214,545**	$ 200,030	$ 199,302	$ 190,044	$ 175,163	$ 171,048	$ 138,051	$ 133,025
Business and government	**422,002**	384,988	372,303	375,144	342,367	313,820	293,460	262,833
Financial institutions	**39,987**	40,349	40,272	35,731	36,487	33,019	34,178	25,376
	676,534	625,367	611,877	600,919	554,017	517,887	465,689	421,234
Financial instruments designated at fair value through profit or loss	**8,188**	4,663	1,459	1,486	465	174	157	101
Other								
Acceptances	**16,338**	13,560	11,978	10,296	9,876	10,556	8,932	8,172
Obligations related to securities sold short	**32,087**	30,766	23,312	20,212	27,050	24,977	18,622	15,450
Derivative financial instruments	**37,967**	34,200	42,387	45,270	36,438	29,267	35,323	40,236
Obligations related to securities sold under repurchase agreements and securities lent	**101,257**	95,843	97,083	77,015	88,953	77,508	56,968	38,216
Subordinated debentures	**5,698**	5,935	7,633	6,182	4,871	5,841	10,143	6,923
Capital instruments	**–**	–	–	–	–	–	–	2,003
Other liabilities	**52,744**	43,314	42,716	41,638	34,785	32,047	32,726	29,848
	246,091	223,618	225,109	200,613	201,973	180,196	162,714	140,848
	930,813	853,648	838,445	803,018	756,455	698,257	628,560	562,183
Equity								
Common equity								
Common shares	**18,234**	15,644	15,513	15,141	15,231	14,516	13,139	8,336
Retained earnings	**41,414**	38,117	34,752	31,316	28,609	25,068	21,775	18,421
Accumulated other comprehensive income (loss)	**992**	1,577	2,240	2,455	949	388	(745)	(497)
Other reserves	**404**	116	152	173	176	193	166	96
Total common equity	**61,044**	55,454	52,657	49,085	44,965	40,165	34,335	26,356
Preferred shares and other equity instruments	**4,184**	4,579	3,594	2,934	2,934	4,084	4,384	4,384
Total equity attributable to equity holders of the Bank	**65,228**	60,033	56,251	52,019	47,899	44,249	38,719	30,740
Non-controlling interests								
Non-controlling interests in subsidiaries	**2,452**	1,592	1,570	1,460	1,312	1,138	946	626
Capital instrument equity holders	**–**	–	–	–	–	–	–	874
Total equity	**67,680**	61,625	57,821	53,479	49,211	45,387	39,665	32,240
	$ 998,493	$ 915,273	$ 896,266	$ 856,497	$ 805,666	$ 743,644	$ 668,225	$ 594,423

(1) The amounts for year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Notes 3 and 4 in the consolidated financial statements).

T79 Consolidated Statement of Income

		IFRS						
For the year ended October 31 ($ millions)	**2018**	2017	2016	2015	2014	2013	2012	2011
Revenue								
Interest income[1]								
Loans	**$ 24,991**	$ 21,719	$ 20,419	$ 18,912	$ 18,176	$ 17,359	$ 15,606	$ 14,373
Securities	**1,771**	1,403	1,237	922	921	1,000	1,045	986
Securities purchased under resale agreements and securities borrowed	**446**	283	158	161	180	190	221	221
Deposits with financial institutions	**859**	522	394	292	263	279	287	275
	28,067	23,927	22,208	20,287	19,540	18,828	17,159	15,855
Interest expense								
Deposits	**10,544**	7,878	6,793	6,070	6,173	6,397	6,117	5,589
Subordinated debentures	**214**	226	232	187	204	339	381	369
Capital instruments	**–**	–	–	–	–	–	–	138
Other	**1,118**	788	891	938	858	742	691	745
	11,876	8,892	7,916	7,195	7,235	7,478	7,189	6,841
Net interest income	**16,191**	15,035	14,292	13,092	12,305	11,350	9,970	9,014
Non-interest income[1]	**12,584**	12,120	12,058	10,957	11,299	9,949	9,676	8,296
Total revenue	**28,775**	27,155	26,350	24,049	23,604	21,299	19,646	17,310
Provision for credit losses[1]	**2,611**	2,249	2,412	1,942	1,703	1,288	1,252	1,076
Non-interest expenses	**15,058**	14,630	14,540	13,041	12,601	11,664	10,436	9,481
Income before taxes	**11,106**	10,276	9,398	9,066	9,300	8,347	7,958	6,753
Income tax expense	**2,382**	2,033	2,030	1,853	2,002	1,737	1,568	1,423
Net income	**$ 8,724**	$ 8,243	$ 7,368	$ 7,213	$ 7,298	$ 6,610	$ 6,390	$ 5,330
Net income attributable to non-controlling interests	**$ 176**	$ 238	$ 251	$ 199	$ 227	$ 231	$ 196	$ 149
Non-controlling interests in subsidiaries	**176**	238	251	199	227	231	196	91
Capital instrument equity holders	**–**	–	–	–	–	–	–	58
Net income attributable to equity holders of the Bank	**$ 8,548**	$ 8,005	$ 7,117	$ 7,014	$ 7,071	$ 6,379	$ 6,194	$ 5,181
Preferred shareholders and other equity instrument holders	**187**	129	130	117	155	217	220	216
Common shareholders	**$ 8,361**	$ 7,876	$ 6,987	$ 6,897	$ 6,916	$ 6,162	$ 5,974	$ 4,965
Earnings per common share (in dollars)								
Basic	**$ 6.90**	$ 6.55	$ 5.80	$ 5.70	$ 5.69	$ 5.15	$ 5.27	$ 4.63
Diluted	**$ 6.82**	$ 6.49	$ 5.77	$ 5.67	$ 5.66	$ 5.11	$ 5.18	$ 4.53
Dividends per common share (in dollars)	**$ 3.28**	$ 3.05	$ 2.88	$ 2.72	$ 2.56	$ 2.39	$ 2.19	$ 2.05

(1) The amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior year amounts have not been restated (refer to Notes 3 and 4 in the consolidated financial statements).

T78A Consolidated Balance Sheet – CGAAP

As at October 31 ($ millions)	CGAAP 2010	2009	2008
Assets			
Cash resources	$ 46,027	$ 43,278	$ 37,318
Securities			
Trading	64,684	58,067	48,292
Available-for-sale	47,228	55,699	38,823
Equity accounted investments	4,651	3,528	920
	116,563	117,294	88,035
Securities purchased under resale agreements	27,920	17,773	19,451
Loans			
Residential mortgages	120,482	101,604	115,084
Personal and credit cards	62,548	61,048	50,719
Business and government	103,981	106,520	125,503
	287,011	269,172	291,306
Allowance for credit losses	2,787	2,870	2,626
	284,224	266,302	288,680
Other			
Customers' liability under acceptances	7,616	9,583	11,969
Derivative instruments	26,852	25,992	44,810
Land, buildings and equipment	2,450	2,372	2,449
Other assets	15,005	13,922	14,913
	51,923	51,869	74,141
	$ 526,657	$ 496,516	$ 507,625
Liabilities and shareholders' equity			
Deposits			
Personal	$ 128,850	$ 123,762	$ 118,919
Business and government	210,687	203,594	200,566
Banks	22,113	23,063	27,095
	361,650	350,419	346,580
Other			
Acceptances	7,616	9,583	11,969
Obligations related to securities sold under repurchase agreements	40,286	36,568	36,506
Obligations related to securities sold short	21,519	14,688	11,700
Derivative instruments	31,990	28,806	42,811
Other liabilities	28,947	24,682	31,063
	130,358	114,327	134,049
Subordinated debentures	5,939	5,944	4,352
Capital instrument liabilities	500	500	500
Shareholders' equity			
Preferred shares	3,975	3,710	2,860
Common shareholders' equity			
Common shares and contributed surplus	5,775	4,946	3,829
Retained earnings	21,932	19,916	18,549
Accumulated other comprehensive income (loss)	(4,051)	(3,800)	(3,596)
Total common shareholders' equity	23,656	21,062	18,782
Total equity attributable to equity holders of the Bank	27,631	24,772	21,642
Non-controlling interests	579	554	502
Total shareholders' equity	28,210	25,326	22,144
	$ 526,657	$ 496,516	$ 507,625

T79A Consolidated Statement of Income – CGAAP

	CGAAP		
For the year ended October 31 ($ millions)	2010	2009	2008
Interest income			
Loans	$ 12,171	$ 13,973	$ 15,832
Securities	4,227	4,090	4,615
Securities purchased under resale agreements	201	390	786
Deposits with banks	292	482	1,083
	16,891	18,935	22,316
Interest expense			
Deposits	6,768	8,339	12,131
Subordinated debentures	289	285	166
Capital instrument liabilities	37	37	37
Other	1,176	1,946	2,408
	8,270	10,607	14,742
Net interest income	8,621	8,328	7,574
Provision for credit losses	1,239	1,744	630
Net interest income after provision for credit losses	7,382	6,584	6,944
Other income	6,884	6,129	4,302
Net interest and other income	14,266	12,713	11,246
Non-interest expenses			
Salaries and employee benefits	4,647	4,344	4,109
Other	3,535	3,575	3,187
	8,182	7,919	7,296
Income before income taxes	6,084	4,794	3,950
Provision for income taxes	1,745	1,133	691
Net income	$ 4,339	$ 3,661	$ 3,259
Net income attributable to non-controlling interests	$ 100	$ 114	$ 119
Net income attributable to equity holders of the Bank	4,239	3,547	3,140
Preferred shareholders	201	186	107
Common shareholders	$ 4,038	$ 3,361	$ 3,033
Average number of common shares outstanding (millions)			
Basic	1,032	1,013	987
Diluted	1,034	1,016	993
Earnings per common share (in dollars)(1)			
Basic	$ 3.91	$ 3.32	$ 3.07
Diluted	$ 3.91	$ 3.31	$ 3.05
Dividends per common share (in dollars)	$ 1.96	$ 1.96	$ 1.92

(1) The calculation of earnings per share is based on full dollar and share amounts.

MANAGEMENT'S DISCUSSION AND ANALYSIS

T80 Consolidated Statement of Changes in Equity

For the year ended October 31 ($ millions)	2018	2017	2016	2015	2014	2013	2012	2011
		IFRS						
Common shares								
Balance at beginning of year	**$ 15,644**	$ 15,513	$ 15,141	$ 15,231	$ 14,516	$ 13,139	$ 8,336	$ 5,750
Issued	**2,708**	313	391	104	771	1,377	4,803	2,586
Purchased for cancellation	**(118)**	(182)	(19)	(194)	(56)	–	–	–
Balance at end of year	**$ 18,234**	$ 15,644	$ 15,513	$ 15,141	$ 15,231	$ 14,516	$ 13,139	$ 8,336
Retained earnings								
Balance at beginning of year	**38,117**	34,752	31,316	28,609	25,315	21,978	18,421	21,932
IFRS adjustment	**(564)(1)**	–	–	–	(247)	(203)	(144)	(6,248)
Restated balances	**37,553**	34,752	31,316	28,609	25,068	21,775	18,277	15,684
Net income attributable to common shareholders of the Bank (2)	**8,361**	7,876	6,987	6,897	6,916	6,162	5,974	4,965
Dividends: Preferred(3)	**–**	–	–	–	–	–	–	–
Common	**(3,985)**	(3,668)	(3,468)	(3,289)	(3,110)	(2,858)	(2,493)	(2,200)
Purchase of shares for cancellation and premium on redemption	**(514)**	(827)	(61)	(761)	(264)	–	–	–
Other	**(1)**	(16)	(22)	(140)(4)	(1)	(11)	17	(28)
Balance at end of year	**$ 41,414**	$ 38,117	$ 34,752	$ 31,316	$ 28,609	$ 25,068	$ 21,775	$ 18,421
Accumulated other comprehensive income (loss)								
Balance at beginning of year	**1,577**	2,240	2,455	949	545	(31)	(497)	(4,051)
IFRS adjustment	**51(1)**	–	–	–	(157)	(714)	32	4,320
Restated balances	**1,628**	2,240	2,455	949	388	(745)	(465)	269
Cumulative effect of adopting new accounting policies	**–**	–	–	(5)(5)	–	–	–	–
Other comprehensive income (loss)	**(693)**	(663)	(215)	1,511	561	1,133	(280)	(766)
Other	**57**	–	–	–	–	–	–	–
Balance at end of year	**$ 992**	$ 1,577	$ 2,240	$ 2,455	$ 949	$ 388	$ (745)	$ (497)
Other reserves(7)								
Balance at beginning of year	**116**	152	173	176	193	166	96	25
Share-based payments (8)	**6**	8	7	14	30	36	38	46
Other	**282**	(44)	(28)	(17)	(47)	(9)	32	25
Balance at end of year	**$ 404**	$ 116	$ 152	$ 173	$ 176	$ 193	$ 166	$ 96
Total common equity	**$ 61,044**	$ 55,454	$ 52,657	$ 49,085	$ 44,965	$ 40,165	$ 34,335	$ 26,356
Preferred shares and other equity instruments								
Balance at beginning of year	**4,579**	3,594	2,934	2,934	4,084	4,384	4,384	3,975
Net income attributable to preferred shareholders and other equity instrument holders of the Bank (2)	**187**	129	130	117	155	217	220	216
Preferred and other equity instrument dividends (3)	**(187)**	(129)	(130)	(117)	(155)	(217)	(220)	(216)
Issued	**300**	1,560	1,350	–	–	–	–	409
Redeemed	**(695)**	(575)	(690)	–	(1,150)	(300)	–	–
Balance at end of year	**$ 4,184**	$ 4,579	$ 3,594	$ 2,934	$ 2,934	$ 4,084	$ 4,384	$ 4,384
Non-controlling interests								
Balance at beginning of year	**1,592**	1,570	1,460	1,312	1,155	1,743	1,500	579
IFRS adjustment	**(97)(1)**	–	–	–	(17)	(797)	(891)	936
Restated balances	**1,495**	1,570	1,460	1,312	1,138	946	609	1,515
Net income attributable to non-controlling interests	**176**	238	251	199	227	231	196	149
Distributions to non-controlling interests	**(199)**	(133)	(116)	(86)	(76)	(80)	(44)	(181)
Effect of foreign exchange and others	**980**	(83)	(25)	35	23	41	185	17
Balance at end of year	**$ 2,452**	$ 1,592	$ 1,570	$ 1,460	$ 1,312	$ 1,138	$ 946	$ 1,500
Total equity at end of year	**$ 67,680**	$ 61,625	$ 57,821	$ 53,479	$ 49,211	$ 45,387	$ 39,665	$ 32,240

(1) Refer to Note 4 in the consolidated financial statements.
(2) Under CGAAP, net income attributable to preferred shareholders was included in retained earnings.
(3) Under IFRS, preferred dividends are recorded as a reduction to preferred shareholders' equity. Under CGAAP, dividends are a reduction to retained earnings.
(4) Includes retrospective adjustments primarily related to foreign currency translation on Allowance for Credit Losses with respect to periods prior to 2013 ($152).
(5) To reflect the adoption of the own credit risk provisions of IFRS 9 pertaining to financial liabilities designated at fair value through profit or loss.
(6) Relates to the adoption of the new accounting standard for impairment and classification of financial instruments under CGAAP.
(7) Under CGAAP, amounts represent Contributed Surplus.
(8) Represents amounts on account of share-based payments (refer to Note 26 in the consolidated financial statements).

T81 Consolidated Statement of Comprehensive Income

For the year ended October 31 ($ millions)	2018	2017	2016	2015	2014	2013	2012	2011
		IFRS						
Net income	**$ 8,724**	$ 8,243	$ 7,368	$ 7,213	$ 7,298	$ 6,610	$ 6,390	$ 5,330
Other comprehensive income (loss), net of income taxes:								
Items that will be reclassified subsequently to net income								
Net change in unrealized foreign currency translation gains (losses)	**(606)**	(1,259)	396	1,855	889	346	149	(697)
Net change in unrealized gains (losses) on available-for-sale securities (debt and equity) (1)	**n/a**	(55)	(172)	(480)	(38)	110	151	(169)
Net change in fair value due to change in debt instruments measured at fair value through other comprehensive income(1)	**(252)**	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Net change in gains (losses) on derivative instruments designated as cash flow hedges	**(361)**	(28)	258	55	(6)	93	116	105
Other comprehensive income (loss) from investments in associates	**66**	56	31	(9)	60	20	25	–
Items that will not be reclassified subsequently to net income								
Net change in remeasurement of employee benefit plan asset and liability	**318**	592	(716)	(1)	(320)	563	(747)	–
Net change in fair value due to change in equity instruments designated at fair value through other comprehensive income(1)	**60**	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Net change in fair value due to change in own credit risk on financial liabilities designated under the fair value option(2)	**(22)**	(21)	(16)	15	n/a	n/a	n/a	n/a
Other comprehensive income (loss) from investments in associates	**(7)**	6	(10)	1	(2)	–	–	–
Other comprehensive income (loss)	**(804)**	(709)	(229)	1,436	583	1,132	(306)	(761)
Comprehensive income	**$ 7,920**	$ 7,534	$ 7,139	$ 8,649	$ 7,881	$ 7,742	$ 6,084	$ 4,569
Comprehensive income attributable to:								
Common shareholders of the Bank	**$ 7,668**	$ 7,213	$ 6,772	$ 8,408	$ 7,477	$ 7,298	$ 5,694	$ 4,199
Preferred shareholders and other equity instrument holders of the Bank	**187**	129	130	117	155	217	220	216
Non-controlling interests in subsidiaries	**65**	192	237	124	249	227	170	96
Capital instrument equity holders	**–**	–	–	–	–	–	–	58
	$ 7,920	$ 7,534	$ 7,139	$ 8,649	$ 7,881	$ 7,742	$ 6,084	$ 4,569

(1) The amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Notes 3 and 4 in the consolidated financial statements).
(2) In accordance with the transition requirements for the own credit risk provisions of IFRS 9, prior year comparatives have not been restated for the adoption of this standard in 2015.

CGAAP		
2010	2009	2008
$ 4,946	$ 3,829	$ 3,566
804	1,117	266
–	–	(3)
$ 5,750	$ 4,946	$ 3,829
19,916	18,549	17,460
–	–	–
19,916	18,549	17,460
4,239	3,547	3,140
(201)	(186)	(107)
(2,023)	(1,990)	(1,896)
–	–	(37)
1	(4)	(11)
$ 21,932	$ 19,916	$ 18,549
(3,800)	(3,596)	(3,857)
–	–	–
(3,800)	(3,596)	(3,857)
–	595[6]	–
(251)	(799)	261
–	–	–
$ (4,051)	$ (3,800)	$ (3,596)
–	–	–
25	–	–
–	–	–
$ 25	$ –	$ –
$ 23,656	$ 21,062	$ 18,782
3,710	2,860	1,635
–	–	–
–	–	–
265	850	1,225
–	–	–
$ 3,975	$ 3,710	$ 2,860
554	502	n/a
–	–	–
554	502	n/a
100	114	n/a
(35)	(36)	n/a
(40)	(26)	n/a
$ 579	$ 554	$ 502
$ 28,210	$ 25,326	$ 22,144

CGAAP		
2010	2009	2008
$ 4,339	$ 3,661	$ 3,259
(591)	(1,736)	2,368
278	894	(1,588)
n/a	n/a	n/a
62	43	(519)
–	–	–
–	–	–
n/a	n/a	n/a
n/a	n/a	n/a
–	–	–
(251)	(799)	261
$ 4,088	$ 2,862	$ 3,520
$ 3,787	$ 2,562	$ 3,294
201	186	107
100	114	119
–	–	–
$ 4,088	$ 2,862	$ 3,520

T82 Other statistics

	IFRS							
For the year ended October 31	**2018(1)**	2017	2016	2015	2014	2013	2012	2011
Operating performance								
Basic earnings per share ($)	**6.90**	6.55	5.80	5.70	5.69	5.15	5.27	4.63
Diluted earnings per share ($)	**6.82**	6.49	5.77	5.67	5.66	5.11	5.18	4.53
Return on equity (%)	**14.5**	14.6	13.8	14.6	16.1	16.6	19.9	20.3
Productivity ratio (%)	**52.3**	53.9	55.2	54.2	53.4	54.8	53.1	54.8
Return on assets (%)	**0.92**	0.90	0.81	0.84	0.92	0.88	0.97	0.91
Core banking margin (%)(2)	**2.46**	2.46	2.38	2.39	2.39	2.31	2.31	2.32
Net interest margin on total average assets (%)	**n/a**	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Capital measures(3)								
Common Equity Tier 1 (CET1) capital ratio (%)	**11.1**	11.5	11.0	10.3	10.8	9.1	n/a	n/a
Tier 1 capital ratio (%)	**12.5**	13.1	12.4	11.5	12.2	11.1	13.6	12.2
Total capital ratio (%)	**14.3**	14.9	14.6	13.4	13.9	13.5	16.7	13.9
Leverage ratio (%)	**4.5**	4.7	4.5	4.2	n/a	n/a	n/a	n/a
Common share information								
Closing share price ($) (TSX)	**70.65**	83.28	72.08	61.49	69.02	63.39	54.25	52.53
Number of shares outstanding (millions)	**1,227**	1,199	1,208	1,203	1,217	1,209	1,184	1,089
Dividends paid per share ($)	**3.28**	3.05	2.88	2.72	2.56	2.39	2.19	2.05
Dividend yield (%)(4)	**4.2**	4.0	4.7	4.4	3.8	4.1	4.2	3.7
Price to earnings multiple (trailing 4 quarters)	**10.2**	12.7	12.4	10.8	12.1	12.3	10.3	11.3
Book value per common share ($)	**49.75**	46.24	43.59	40.80	36.96	33.23	28.99	24.20
Other information								
Average total assets ($ millions)	**945,683**	912,619	913,844	860,607	795,641	748,901	659,538	586,101
Number of branches and offices	**3,095**	3,003	3,113	3,177	3,288	3,330	3,123	2,926
Number of employees	**97,629**	88,645	88,901	89,214	86,932	86,690	81,497	75,362
Number of automated banking machines	**9,029**	8,140	8,144	8,191	8,732	8,471	7,341	6,260

(1)The amounts for 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Notes 3 and 4 in the consolidated financial statements).
(2)Refer to page 18 for a discussion of non-GAAP measures.
(3)Effective November 1, 2012, regulatory capital ratios are determined in accordance with Basel III rules as an all-in basis. Comparative amounts for periods 2012-2008 were determined in accordance with Basel II rules.
(4)Based on the average of the high and low common share price for the year.

CGAAP		
2010	2009	2008
3.91	3.32	3.07
3.91	3.31	3.05
18.3	16.7	16.7
52.8	54.8	61.4
0.84	0.71	0.72
n/a	n/a	n/a
1.67	1.62	1.66
n/a	n/a	n/a
11.8	10.7	9.3
13.8	12.9	11.1
n/a	n/a	n/a
54.67	45.25	40.19
1,043	1,025	992
1.96	1.96	1.92
3.9	5.4	4.3
14.0	13.6	13.1
22.68	20.55	18.94
515,991	513,149	455,539
2,784	2,686	2,672
70,772	67,802	69,049
5,978	5,778	5,609

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CONSOLIDATED FINANCIAL STATEMENTS

Management's Responsibility for Financial Information

The management of The Bank of Nova Scotia (the Bank) is responsible for the integrity and fair presentation of the financial information contained in this Annual Report. The consolidated financial statements have been prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board. The consolidated financial statements also comply with the accounting requirements of the Bank Act.

The consolidated financial statements, where necessary, include amounts which are based on the best estimates and judgment of management. Financial information presented elsewhere in this Annual Report is consistent with that shown in the consolidated financial statements.

Management has always recognized the importance of the Bank maintaining and reinforcing the highest possible standards of conduct in all of its actions, including the preparation and dissemination of statements fairly presenting the financial condition of the Bank. In this regard, management has developed and maintains a system of accounting and reporting which provides for the necessary internal controls to ensure that transactions are properly authorized and recorded, assets are safeguarded against unauthorized use or disposition, and liabilities are recognized. The system is augmented by written policies and procedures, the careful selection and training of qualified staff, the establishment of organizational structures providing an appropriate and well-defined division of responsibilities, and the communication of policies and guidelines of Scotiabank's Code of Conduct throughout the Bank.

Management, under the supervision of and the participation of the President and Chief Executive Officer and the Executive Vice President and Chief Financial Officer, have a process in place to evaluate disclosure controls and procedures and internal control over financial reporting in line with Canadian and U.S. securities regulations.

The system of internal controls is further supported by a professional staff of internal auditors who conduct periodic audits of all aspects of the Bank's operations. As well, the Bank's Chief Auditor has full and free access to, and meets periodically with the Audit and Conduct Review Committee of the Board of Directors. In addition, the Bank's compliance function maintains policies, procedures and programs directed at ensuring compliance with regulatory requirements, including conflict of interest rules.

The Office of the Superintendent of Financial Institutions Canada, which is mandated to protect the rights and interests of the depositors and creditors of the Bank, examines and enquires into the business and affairs of the Bank, as deemed necessary, to determine whether the provisions of the Bank Act are being complied with, and that the Bank is in a sound financial condition.

The Audit and Conduct Review Committee, composed entirely of outside directors, reviews the consolidated financial statements with both management and the independent auditors before such statements are approved by the Board of Directors and submitted to the shareholders of the Bank.

The Audit and Conduct Review Committee reviews and reports its findings to the Board of Directors on all related party transactions that may have a material impact on the Bank.

KPMG LLP, the independent auditors appointed by the shareholders of the Bank, have audited 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 prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board in accordance with Canadian Generally Accepted Auditing Standards and the standards of the Public Company Accounting Oversight Board (United States) and the effectiveness of internal control over financial reporting and have expressed their opinions upon completion of such audits in the following report to the shareholders. The Shareholders' Auditors have full and free access to, and meet periodically with, the Audit and Conduct Review Committee to discuss their audits, including any findings as to the integrity of the Bank's accounting, financial reporting and related matters.

Brian J. Porter
President and Chief Executive Officer

Raj Viswanathan
Executive Vice President and Chief Financial Officer

Toronto, Canada
November 27, 2018

CONSOLIDATED FINANCIAL STATEMENTS

Independent Auditors' Report of Registered Public Accounting Firm

To the Shareholders of The Bank of Nova Scotia

We have audited the accompanying consolidated financial statements of The Bank of Nova Scotia (the "Bank"), which comprise the consolidated statements of financial position 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 the related 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 4 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 November 27, 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.



Chartered Professional Accountants, Licensed Public Accountants
We have served as the Bank's auditor since 2006 and as joint auditor for the prior 14 years.
November 27, 2018

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CONSOLIDATED FINANCIAL STATEMENTS

Consolidated Statement of Financial Position

As at October 31 ($ millions)	Note	2018(1)	2017
Assets			
Cash and deposits with financial institutions	6	**$ 62,269**	$ 59,663
Precious metals		**3,191**	5,717
Trading assets			
Securities	8(a)	**85,474**	78,652
Loans	8(b)	**14,334**	17,312
Other		**454**	2,500
		100,262	98,464
Financial instruments designated at fair value through profit or loss	9	**12**	13
Securities purchased under resale agreements and securities borrowed		**104,018**	95,319
Derivative financial instruments	10	**37,558**	35,364
Investment securities	12	**78,396**	69,269
Loans			
Residential mortgages	13	**253,357**	236,916
Personal loans	13	**96,019**	89,227
Credit cards	13	**16,485**	14,104
Business and government	13	**191,038**	168,449
		556,899	508,696
Allowance for credit losses	13(e)	**5,065**	4,327
		551,834	504,369
Other			
Customers' liability under acceptances, net of allowance		**16,329**	13,560
Property and equipment	16	**2,684**	2,381
Investments in associates	17	**4,850**	4,586
Goodwill and other intangible assets	18	**17,719**	12,106
Deferred tax assets	27(c)	**1,938**	1,713
Other assets	19	**17,433**	12,749
		60,953	47,095
		$ 998,493	$ 915,273
Liabilities			
Deposits			
Personal	20	**$ 214,545**	$ 200,030
Business and government	20	**422,002**	384,988
Financial institutions	20	**39,987**	40,349
		676,534	625,367
Financial instruments designated at fair value through profit or loss	9	**8,188**	4,663
Other			
Acceptances		**16,338**	13,560
Obligations related to securities sold short		**32,087**	30,766
Derivative financial instruments	10	**37,967**	34,200
Obligations related to securities sold under repurchase agreements and securities lent		**101,257**	95,843
Subordinated debentures	21	**5,698**	5,935
Other liabilities	22	**52,744**	43,314
		246,091	223,618
		930,813	853,648
Equity			
Common equity			
Common shares	24(a)	**18,234**	15,644
Retained earnings		**41,414**	38,117
Accumulated other comprehensive income (loss)		**992**	1,577
Other reserves		**404**	116
Total common equity		**61,044**	55,454
Preferred shares and other equity instruments	24(b)	**4,184**	4,579
Total equity attributable to equity holders of the Bank		**65,228**	60,033
Non-controlling interests in subsidiaries	31(b)	**2,452**	1,592
		67,680	61,625
		$ 998,493	$ 915,273

(1) The amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Notes 3 and 4).

Thomas C. O'Neill
Chairman of the Board

Brian J. Porter
President and Chief Executive Officer

The accompanying notes are an integral part of these consolidated financial statements.

CONSOLIDATED FINANCIAL STATEMENTS

Consolidated Statement of Income

For the year ended October 31 ($ millions)	Note	2018	2017	2016
Revenue				
Interest income(1)(2)	32			
Loans		**$ 24,991**	$ 21,719	$ 20,419
Securities		**1,771**	1,403	1,237
Securities purchased under resale agreements and securities borrowed		**446**	283	158
Deposits with financial institutions		**859**	522	394
		28,067	23,927	22,208
Interest expense	32			
Deposits		**10,544**	7,878	6,793
Subordinated debentures		**214**	226	232
Other		**1,118**	788	891
		11,876	8,892	7,916
Net interest income		**16,191**	15,035	14,292
Non-interest income(1)				
Banking	33	**4,001**	3,855	3,669
Wealth management	33	**3,341**	3,318	3,282
Underwriting and other advisory		**514**	598	594
Non-trading foreign exchange		**622**	557	540
Trading revenues(3)	34	**1,420**	986	1,228
Net gain on sale of investment securities	12(g)	**146**	380	534
Net income from investments in associated corporations	17	**559**	407	414
Insurance underwriting income, net of claims		**686**	626	603
Other fees and commissions(3)		**841**	903	732
Other(3)		**454**	490	462
		12,584	12,120	12,058
Total revenue		**28,775**	27,155	26,350
Provision for credit losses(1)	13(e)	**2,611**	2,249	2,412
		26,164	24,906	23,938
Non-interest expenses				
Salaries and employee benefits		**7,455**	7,375	7,025
Premises and technology		**2,577**	2,436	2,238
Depreciation and amortization		**848**	761	684
Communications		**447**	437	442
Advertising and business development		**581**	581	617
Professional		**881**	775	693
Business and capital taxes		**464**	423	403
Other		**1,805**	1,842	2,438
		15,058	14,630	14,540
Income before taxes		**11,106**	10,276	9,398
Income tax expense	27	**2,382**	2,033	2,030
Net income		**$ 8,724**	$ 8,243	$ 7,368
Net income attributable to non-controlling interests in subsidiaries	31(b)	**176**	238	251
Net income attributable to equity holders of the Bank		**$ 8,548**	$ 8,005	$ 7,117
Preferred shareholders and other equity instrument holders		**187**	129	130
Common shareholders		**$ 8,361**	$ 7,876	$ 6,987
Earnings per common share (in dollars)				
Basic	35	**$ 6.90**	$ 6.55	$ 5.80
Diluted	35	**6.82**	6.49	5.77
Dividends paid per common share (in dollars)	24(a)	**3.28**	3.05	2.88

(1) The amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior year amounts have not been restated (refer to Notes 3 and 4).
(2) Interest income on financial assets measured at amortized cost and FVOCI is calculated using the effective interest method. Includes interest income of $27,854 for the year ended October 31, 2018 from these financial assets.
(3) Prior year amounts have been reclassified to conform with current period presentation.

The accompanying notes are an integral part of these consolidated financial statements.

CONSOLIDATED FINANCIAL STATEMENTS

Consolidated Statement of Comprehensive Income

For the year ended October 31 ($ millions)	2018	2017	2016
Net income	**$ 8,724**	$ 8,243	$ 7,368
Other comprehensive income (loss)			
Items that will be reclassified subsequently to net income			
Net change in unrealized foreign currency translation gains (losses):			
Net unrealized foreign currency translation gains (losses)	**(406)**	(1,564)	614
Net gains (losses) on hedges of net investments in foreign operations	**(281)**	404	(300)
Income tax expense (benefit):			
Net unrealized foreign currency translation gains (losses)	**(7)**	(8)	(3)
Net gains (losses) on hedges of net investments in foreign operations	**(74)**	107	(79)
	(606)	(1,259)	396
Net change in unrealized gains (losses) on available-for-sale securities (debt and equity)(1):			
Net unrealized gains (losses) on available-for-sale securities	**n/a**	(217)	308
Reclassification of net (gains) losses to net income(2)	**n/a**	143	(549)
Income tax expense (benefit):			
Net unrealized gains (losses) on available-for-sale securities	**n/a**	(61)	82
Reclassification of net (gains) losses to net income	**n/a**	42	(151)
	n/a	(55)	(172)
Net change in fair value due to change in debt instruments measured at fair value through other comprehensive income(1):			
Net gains (losses) in fair value	**(605)**	n/a	n/a
Reclassification of net (gains) losses to net income	**281**	n/a	n/a
Income tax expense (benefit):			
Net gains (losses) in fair value	**(145)**	n/a	n/a
Reclassification of net (gains) losses to net income	**73**	n/a	n/a
	(252)	n/a	n/a
Net change in gains (losses) on derivative instruments designated as cash flow hedges:			
Net gains (losses) on derivative instruments designated as cash flow hedges	**(1,181)**	1,722	(7)
Reclassification of net (gains) losses(3)	**695**	(1,761)	357
Income tax expense (benefit):			
Net gains (losses) on derivative instruments designated as cash flow hedges	**(307)**	454	9
Reclassification of net (gains) losses to net income	**182**	(465)	83
	(361)	(28)	258
Other comprehensive income (loss) from investments in associates	**66**	56	31
Items that will not be reclassified subsequently to net income			
Net change in remeasurement of employee benefit plan asset and liability:			
Actuarial gains (losses) on employee benefit plans	**444**	805	(972)
Income tax expense (benefit)	**126**	213	(256)
	318	592	(716)
Net change in fair value due to change in equity instruments designated at fair value through other comprehensive income(1):			
Net gains (losses) in fair value	**75**	n/a	n/a
Income tax expense (benefit)	**15**	n/a	n/a
	60	n/a	n/a
Net change in fair value due to change in own credit risk on financial liabilities designated under the fair value option:			
Change in fair value due to change in own credit risk on financial liabilities designated under the fair value option	**(30)**	(28)	(23)
Income tax expense (benefit)	**(8)**	(7)	(7)
	(22)	(21)	(16)
Other comprehensive income (loss) from investments in associates	**(7)**	6	(10)
Other comprehensive income (loss)	**(804)**	(709)	(229)
Comprehensive income	**$ 7,920**	$ 7,534	$ 7,139
Comprehensive income attributable to non-controlling interests	**65**	192	237
Comprehensive income attributable to equity holders of the Bank	**$ 7,855**	$ 7,342	$ 6,902
Preferred shareholders and other equity instrument holders	**187**	129	130
Common shareholders	**$ 7,668**	$ 7,213	$ 6,772

(1) The amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Notes 3 and 4).
(2) Includes amounts related to qualifying hedges.
(3) Amount for 2016 includes reclassification of $22 pre-tax to goodwill for acquisition-related cash flow hedges.

The accompanying notes are an integral part of these consolidated financial statements.

CONSOLIDATED FINANCIAL STATEMENTS

Consolidated Statement of Changes in Equity

($ millions)	Common shares (Note 24)	Retained earnings(1)	Accumulated other comprehensive income (loss): Foreign currency translation	Available-for-sale securities	Debt instruments FVOCI	Equity instruments FVOCI	Cash flow hedges	Other(2)	Other reserves	Total common equity	Preferred shares and other equity instruments (Note 24)	Total attributable to equity holders	Non-controlling interests in subsidiaries (Note 31(b))	Total
Balance as at October 31, 2017	**$ 15,644**	**$ 38,117**	**$ 1,861**	**$ (46)**	**$ –**	**$ –**	**$ 235**	**$ (473)**	**$ 116**	**$ 55,454**	**$ 4,579**	**$ 60,033**	**$ 1,592**	**$ 61,625**
Cumulative effect of adopting IFRS 9(3)	**–**	**(564)**	**–**	**46**	**184**	**(179)**	**–**	**–**	**–**	**(513)**	**–**	**(513)**	**(97)**	**(610)**
Balance as at November 1, 2017	**15,644**	**37,553**	**1,861**	**–**	**184**	**(179)**	**235**	**(473)**	**116**	**54,941**	**4,579**	**59,520**	**1,495**	**61,015**
Net income	**–**	**8,361**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**8,361**	**187**	**8,548**	**176**	**8,724**
Other comprehensive income (loss)	**–**	**–**	**(477)**	**–**	**(252)**	**53**	**(356)**	**339**	**–**	**(693)**	**–**	**(693)**	**(111)**	**(804)**
Total comprehensive income	**$ –**	**$ 8,361**	**$ (477)**	**$ –**	**$ (252)**	**$ 53**	**$ (356)**	**$ 339**	**$ –**	**$ 7,668**	**$ 187**	**$ 7,855**	**$ 65**	**$ 7,920**
Shares issued	**2,708**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**(19)**	**2,689**	**300**	**2,989**	**–**	**2,989**
Shares repurchased/redeemed	**(118)**	**(514)**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**(632)**	**(695)**	**(1,327)**	**–**	**(1,327)**
Dividends and distributions paid to equity holders	**–**	**(3,985)**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**(3,985)**	**(187)**	**(4,172)**	**(199)**	**(4,371)**
Share-based payments(4)	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**6**	**6**	**–**	**6**	**–**	**6**
Other	**–**	**(1)**	**57**	**–**	**–**	**–**	**–**	**–**	**301(5)**	**357**	**–**	**357**	**1,091(5)**	**1,448**
Balance as at October 31, 2018	**$ 18,234**	**$ 41,414**	**$ 1,441**	**$ –**	**$ (68)**	**$ (126)**	**$ (121)**	**$ (134)**	**$ 404**	**$ 61,044**	**$ 4,184**	**$ 65,228**	**$ 2,452**	**$ 67,680**
Balance as at November 1, 2016	$ 15,513	$ 34,752	$ 3,055	$ 14	$ –	$ –	$ 264	$ (1,093)	$ 152	$ 52,657	$ 3,594	$ 56,251	$ 1,570	$ 57,821
Net income	–	7,876	–	–	–	–	–	–	–	7,876	129	8,005	238	8,243
Other comprehensive income (loss)	–	–	(1,194)	(60)	–	–	(29)	620	–	(663)	–	(663)	(46)	(709)
Total comprehensive income	$ –	$ 7,876	$ (1,194)	$ (60)	$ –	$ –	$ (29)	$ 620	$ –	$ 7,213	$ 129	$ 7,342	$ 192	$ 7,534
Shares and other equity instruments issued	313	–	–	–	–	–	–	–	(44)	269	1,560	1,829	–	1,829
Shares repurchased/redeemed	(182)	(827)	–	–	–	–	–	–	–	(1,009)	(575)	(1,584)	–	(1,584)
Dividends and distributions paid to equity holders	–	(3,668)	–	–	–	–	–	–	–	(3,668)	(129)	(3,797)	(133)	(3,930)
Share-based payments(4)	–	–	–	–	–	–	–	–	8	8	–	8	–	8
Other	–	(16)	–	–	–	–	–	–	–	(16)	–	(16)	(37)(5)	(53)
Balance as at October 31, 2017	$ 15,644	$ 38,117	$ 1,861	$ (46)	$ –	$ –	$ 235	$ (473)	$ 116	$ 55,454	$ 4,579	$ 60,033	$ 1,592	$ 61,625
Balance as at November 1, 2015	$ 15,141	$ 31,316	$ 2,633	$ 194	$ –	$ –	$ 7	$ (379)	$ 173	$ 49,085	$ 2,934	$ 52,019	$ 1,460	$ 53,479
Net income	–	6,987	–	–	–	–	–	–	–	6,987	130	7,117	251	7,368
Other comprehensive income (loss)	–	–	422	(180)	–	–	257	(714)	–	(215)	–	(215)	(14)	(229)
Total comprehensive income	$ –	$ 6,987	$ 422	$ (180)	$ –	$ –	$ 257	$ (714)	$ –	$ 6,772	$ 130	$ 6,902	$ 237	$ 7,139
Shares issued	391	–	–	–	–	–	–	–	(28)	363	1,350	1,713	–	1,713
Shares repurchased/redeemed	(19)	(61)	–	–	–	–	–	–	–	(80)	(690)	(770)	–	(770)
Dividends and distributions paid to equity holders	–	(3,468)	–	–	–	–	–	–	–	(3,468)	(130)	(3,598)	(116)	(3,714)
Share-based payments(4)	–	–	–	–	–	–	–	–	7	7	–	7	–	7
Other	–	(22)	–	–	–	–	–	–	–	(22)	–	(22)	(11)(5)	(33)
Balance as at October 31, 2016	$ 15,513	$ 34,752	$ 3,055	$ 14	$ –	$ –	$ 264	$ (1,093)	$ 152	$ 52,657	$ 3,594	$ 56,251	$ 1,570	$ 57,821

(1) Includes undistributed retained earnings of $62 (2017 – $61; 2016 – $63) related to a foreign associated corporation, which is subject to local regulatory restriction.
(2) Includes Share from associates, Employee benefits and Own credit risk.
(3) Refer to Note 4.
(4) Represents amounts on account of share-based payments (refer to Note 26).
(5) Includes changes to non-controlling interests arising from business combinations and related transactions.

The accompanying notes are an integral part of these consolidated financial statements

CONSOLIDATED FINANCIAL STATEMENTS

Consolidated Statement of Cash Flows

Sources (uses) of cash flows for the year ended October 31 ($ millions)	2018(1)	2017	2016
Cash flows from operating activities			
Net income	**$ 8,724**	$ 8,243	$ 7,368
Adjustment for:			
Net interest income	**(16,191)**	(15,035)	(14,292)
Depreciation and amortization	**848**	761	684
Provision for credit losses	**2,611**	2,249	2,412
Equity-settled share-based payment expense	**6**	8	7
Net gain on sale of investment securities	**(146)**	(380)	(534)
Net gain on disposition of business	**–**	(62)	(116)
Net income from investments in associated corporations	**(559)**	(407)	(414)
Income tax expense	**2,382**	2,033	2,030
Restructuring charge	**–**	–	378
Changes in operating assets and liabilities:			
Trading assets	**111**	8,377	(10,044)
Securities purchased under resale agreements and securities borrowed	**(7,721)**	(4,631)	(5,363)
Loans	**(31,848)**	(32,589)	(20,355)
Deposits	**40,338**	27,516	6,702
Obligations related to securities sold short	**239**	7,533	4,007
Obligations related to securities sold under repurchase agreements and securities lent	**4,387**	849	20,865
Net derivative financial instruments	**440**	(391)	(3,806)
Other, net	**(188)**	(1,997)	2,293
Dividends received	**332**	1,600	873
Interest received	**27,384**	23,649	21,099
Interest paid	**(11,400)**	(8,730)	(7,787)
Income tax paid	**(1,938)**	(2,012)	(1,471)
Net cash from/(used in) operating activities	**17,811**	16,584	4,536
Cash flows from investing activities			
Interest-bearing deposits with financial institutions	**(704)**	(14,006)	28,447
Purchase of investment securities	**(91,896)**	(64,560)	(94,441)
Proceeds from sale and maturity of investment securities	**84,336**	66,179	65,069
Acquisition/sale of subsidiaries, associated corporations or business units, net of cash acquired	**(3,862)**	229	(1,050)
Property and equipment, net of disposals	**(416)**	3	(348)
Other, net	**(1,183)**	(385)	(431)
Net cash from/(used in) investing activities	**(13,725)**	(12,540)	(2,754)
Cash flows from financing activities			
Proceeds from issue of subordinated debentures	**–**	–	2,465
Redemption/repayment of subordinated debentures	**(233)**	(1,500)	(1,035)
Proceeds from common shares issued	**1,830**	313	391
Proceeds from preferred shares and other equity instruments issued	**300**	1,560	1,350
Redemption of preferred shares	**(695)**	(575)	(690)
Common shares purchased for cancellation	**(632)**	(1,009)	(80)
Cash dividends and distributions paid	**(4,172)**	(3,797)	(3,598)
Distributions to non-controlling interests	**(199)**	(133)	(116)
Other, net	**931**	2,209	(320)
Net cash from/(used in) financing activities	**(2,870)**	(2,932)	(1,633)
Effect of exchange rate changes on cash and cash equivalents	**(44)**	(142)	(18)
Net change in cash and cash equivalents	**1,172**	970	131
Cash and cash equivalents at beginning of year(2)	**7,825**	6,855	6,724
Cash and cash equivalents at end of year(2)	**$ 8,997**	$ 7,825	$ 6,855

(1) The amounts for year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior year amounts have not been restated (refer to Notes 3 and 4).
(2) Represents cash and non-interest bearing deposits with financial institutions (refer to Note 6).

The accompanying notes are an integral part of these consolidated financial statements.

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1 Reporting Entity

The Bank of Nova Scotia (the Bank) is a chartered schedule I bank under the Bank Act (Canada) (the Bank Act) and is regulated by the Office of the Superintendent of Financial Institutions (OSFI). The Bank is a global financial services provider offering a diverse range of products and services, including personal, commercial, corporate and investment banking. The head office of the Bank is located at 1709 Hollis Street, Halifax, Nova Scotia, Canada and its executive offices are at Scotia Plaza, 44 King Street West, Toronto, Canada. The common shares of the Bank are listed on the Toronto Stock Exchange and the New York Stock Exchange.

2 Basis of Preparation

Statement of compliance

These consolidated financial statements were prepared in accordance with International Financial Reporting Standards (IFRS) as issued by International Accounting Standards Board (IASB) and accounting requirements of OSFI in accordance with Section 308 of the Bank Act. Section 308 states that, except as otherwise specified by OSFI, the financial statements are to be prepared in accordance with IFRS.

The consolidated financial statements for the year ended October 31, 2018 have been approved by the Board of Directors for issue on November 27, 2018.

Certain comparative amounts have been restated to conform with the basis of presentation in the current year.

Basis of measurement

The consolidated financial statements have been prepared on the historical cost basis except for the following material items that are measured at fair value in the Consolidated Statement of Financial Position:

- Financial assets and liabilities measured at fair value through profit or loss
- Financial assets and liabilities designated at fair value through profit or loss
- Derivative financial instruments
- Available-for-sale investment securities (applicable prior to November 1, 2017)
- Equity instruments designated at fair value through other comprehensive income (effective November 1, 2017)
- Debt instruments measured at fair value through other comprehensive income (effective November 1, 2017)

Functional and presentation currency

These consolidated financial statements are presented in Canadian dollars, which is the Bank's functional currency. All financial information presented in Canadian dollars has been rounded to the nearest million unless otherwise stated.

Management's use of estimates, assumptions and judgments

The Bank's accounting policies require estimates, assumptions and judgments that relate to matters that are inherently uncertain. The Bank has established procedures to ensure that accounting policies are applied consistently. Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the year in which the estimates are revised and in any future years affected.

Use of estimates and assumptions

The preparation of these consolidated financial statements, in conformity with IFRS, requires management to make estimates and assumptions that affect the reported amount of assets and liabilities at the date of the consolidated financial statements, other comprehensive income and income and expenses during the reporting period. Estimates made by management are based on historical experience and other assumptions that are believed to be reasonable. Key areas of estimation uncertainty include those relating to the allowance for credit losses, the fair value of financial instruments (including derivatives), corporate income taxes, employee benefits, goodwill and intangible assets, the fair value of all identifiable assets and liabilities as a result of business combinations, impairment of non-financial assets, derecognition of financial assets and liabilities and provisions. While management makes its best estimates and assumptions, actual results could differ from these and other estimates.

Significant judgments

In the preparation of these consolidated financial statements, management is required to make significant judgments in the classification and presentation of transactions and instruments and accounting for involvement with other entities.

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Significant estimates, assumptions and judgments have been made in the following areas and are discussed as noted in the consolidated financial statements:

Allowance for credit losses	Note 3 Note 13(d)
Fair value of financial instruments	Note 3 Note 7
Corporate income taxes	Note 3 Note 27
Employee benefits	Note 3 Note 28
Goodwill and intangible assets	Note 3 Note 18
Fair value of all identifiable assets and liabilities as a result of business combinations	Note 3 Note 38
Impairment of investment securities	Note 3 Note 12
Impairment of non-financial assets	Note 3 Note 16
Structured entities	Note 3 Note 15
De facto control of other entities	Note 3 Note 31
Derecognition of financial assets and liabilities	Note 3 Note 14
Provisions	Note 3 Note 23

3 Significant Accounting Policies

The significant accounting policies used in the preparation of these consolidated financial statements, including any additional accounting requirements of OSFI, as set out below, have been applied consistently to all periods presented in these consolidated financial statements, with the exception of the adoption of IFRS 9 (refer Note 4).

Basis of consolidation

The consolidated financial statements include the assets, liabilities, financial performance and cash flows of the Bank and all of its subsidiaries, after elimination of intercompany transactions and balances. Subsidiaries are defined as entities controlled by the Bank and exclude associates and joint arrangements. The Bank's subsidiaries can be classified as entities controlled through voting interests or structured entities. The Bank consolidates a subsidiary from the date it obtains control. The Bank controls an investee when it is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. For the Bank to control an entity, all of the three elements of control should be in existence:

- power over the investee;
- exposure, or rights, to variable returns from involvement with the investee; and
- the ability to use power over the investee to affect the amount of the Bank's returns.

The Bank does not control an investee when it is acting as an agent. The Bank assesses whether it is an agent by determining whether it is primarily engaged to act on behalf of and for the benefit of another party or parties. The Bank reassesses whether it controls an investee if facts and circumstances indicate that one or more of the elements of control has changed. Non-controlling interests are presented within equity in the Consolidated Statement of Financial Position separate from equity attributable to equity holders of the Bank. Partial sales and incremental purchases of interests in subsidiaries that do not result in a change of control are accounted for as equity transactions with non-controlling interest holders. Any difference between the carrying amount of the interest and the transaction amount is recorded as an adjustment to retained earnings.

Voting-interest subsidiaries

Control is presumed with an ownership interest of more than 50% of the voting rights in an entity unless there are other factors that indicate that the Bank does not control the entity despite having more than 50% of voting rights.

The Bank may consolidate an entity when it owns less than 50% of the voting rights when it has one or more other attributes of power:

- by virtue of an agreement, over more than half of the voting rights;
- to govern the financial and operating policies of the entity under a statute or an agreement;
- to appoint or remove the majority of the members of the board of directors or equivalent governing body and control of the entity is by that board or body; or
- to govern the financial and operating policies of the entity through the size of its holding of voting rights relative to the size and dispersion of holding of the other vote holders and voting patterns at shareholder meetings (i.e., de facto control).

Structured entities

Structured entities are designed to accomplish certain well-defined objectives and for which voting or similar rights are not the dominant factor in deciding who controls the entity. The Bank may become involved with structured entities either at the formation stage or at a later date. The Bank controls an investee when it is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee.

The Bank consolidates all structured entities that it controls.

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Investments in associates
An associate is an entity in which the Bank has significant influence, but not control, over the operating and financial policies of the entity. Significant influence is ordinarily presumed to exist when the Bank holds between 20% and 50% of the voting rights. The Bank may also be able to exercise significant influence through board representation. The effects of potential voting rights that are currently exercisable or convertible are considered in assessing whether the Bank has significant influence.

Investments in associates are recognized initially at cost, which includes the purchase price and other costs directly attributable to the purchase. Associates are accounted for using the equity method which reflects the Bank's share of the increase or decrease of the post-acquisition earnings and other movements in the associate's equity.

If there is a loss of significant influence and the investment ceases to be an associate, equity accounting is discontinued from the date of loss of significant influence. If the retained interest on the date of loss of significant influence is a financial asset, it is measured at fair value and the difference between the fair value and the carrying value is recorded as an unrealized gain or loss in the Consolidated Statement of Income.

Investments in associates are evaluated for impairment at the end of each financial reporting period, or more frequently if events or changes in circumstances indicate the existence of objective evidence of impairment.

For purposes of applying the equity method for an investment that has a different reporting period from the Bank, adjustments are made for the effects of any significant events or transactions that occur between the reporting date of the investment and the reporting date of the Bank.

Joint arrangements
A joint arrangement is an arrangement over which two or more parties have joint control. Joint control exists only when decisions about the relevant activities (i.e., those that significantly affect the returns of the arrangement) require the unanimous consent of the parties sharing the control of the arrangement. Investments in joint arrangements are classified as either joint operations or joint ventures depending on the contractual rights and obligations of each investor, rather than the legal structure of the joint arrangement.

Similar to accounting for investment in associates, for joint ventures, investments are recognized initially at cost and accounted for using the equity method which reflects the Bank's share of the increase or decrease of the post-acquisition earnings and other movements in the joint venture's equity. Investments in joint ventures are evaluated for impairment at the end of each financial reporting period, or more frequently if events or changes in circumstances indicate the existence of objective evidence of impairment.

If there is a loss of joint control and it does not result in the Bank having significant influence over the joint venture, equity accounting is discontinued from the date of loss of joint control. If the retained interest in the former joint venture on the date of loss of joint control is a financial asset, it is measured at fair value and the difference between the fair value and the carrying value is recorded as an unrealized gain or loss in the Consolidated Statement of Income.

Translation of foreign currencies
The financial statements of each of the Bank's foreign operations are measured using its functional currency, being the currency of the primary economic environment of the foreign operation.

Translation gains and losses related to the Bank's monetary items are recognized in non-interest income in the Consolidated Statement of Income. Revenues and expenses denominated in foreign currencies are translated using average exchange rates, except for depreciation and amortization of buildings, equipment and leasehold improvements of the Bank, purchased in foreign currency, which are translated using historical rates. Foreign currency non-monetary items that are measured at historical cost are translated into the functional currency at historical rates. Foreign currency non-monetary items measured at fair value are translated into functional currency using the rate of exchange at the date the fair value was determined. Foreign currency gains and losses on non-monetary items are recognized in the Consolidated Statement of Income or Consolidated Statement of Comprehensive Income consistent with the gain or loss on the non-monetary item.

Unrealized gains and losses arising upon translation of foreign operations, together with any gains or losses arising from hedges of those net investment positions to the extent effective, are credited or charged to net change in unrealized foreign currency translation gains/losses in other comprehensive income in the Consolidated Statement of Comprehensive Income. On disposal or partial disposal of a foreign operation, an appropriate portion of the translation differences previously recognized in other comprehensive income are recognized in the Consolidated Statement of Income.

Financial assets and liabilities

Recognition and initial measurement
The Bank, on the date of origination or purchase, recognizes loans, debt and equity securities, deposits and subordinated debentures at the fair value of consideration paid. Regular-way purchases and sales of financial assets are recognized on the settlement date. All other financial assets and liabilities, including derivatives, are initially recognized on the trade date at which the Bank becomes a party to the contractual provisions of the instrument.

The initial measurement of a financial asset or liability is at fair value plus transaction costs that are directly attributable to its purchase or issuance. For instruments measured at fair value through profit or loss, transaction costs are recognized immediately in profit or loss.

Classification and measurement, derecognition, and impairment of financial instruments effective November 1, 2017

Classification and measurement

Classification and measurement of financial assets
Financial assets are classified into one of the following measurement categories:

- Amortized cost;
- Fair value through other comprehensive income (FVOCI);
- Fair value through profit or loss (FVTPL);
- Elected at fair value through other comprehensive income (Equities only); or
- Designated at FVTPL

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Financial assets include both debt and equity instruments.

Debt instruments
Debt instruments, including loans and debt securities, are classified into one of the following measurement categories:

- Amortized cost;
- Fair value through other comprehensive income (FVOCI);
- Fair value through profit or loss (FVTPL); or
- Designated at FVTPL

Classification of debt instruments is determined based on:

(i) The business model under which the asset is held; and
(ii) The contractual cash flow characteristics of the instrument.

Business model assessment
Business model assessment involves determining how financial assets are managed in order to generate cash flows. The Bank's business model assessment is based on the following categories:

- Held to collect: The objective of the business model is to hold assets and collect contractual cash flows. Any sales of the asset are incidental to the objective of the model.
- Held to collect and for sale: Both collecting contractual cash flows and sales are integral to achieving the objectives of the business model.
- Other business model: The business model is neither held-to-collect nor held-to-collect and for sale.

The Bank assesses business model at a portfolio level reflective of how groups of assets are managed together to achieve a particular business objective. For the assessment of a business model, the Bank takes into consideration the following factors:

- How the performance of assets in a portfolio is evaluated and reported to group heads and other key decision makers within the Bank's business lines;
- How compensation is determined for the Bank's business lines' management that manages the assets;
- Whether the assets are held for trading purposes i.e., assets that the Bank acquires or incurs principally for the purpose of selling or repurchasing in the near term, or holds as part of a portfolio that is managed together for short-term profit or position taking;
- The risks that affect the performance of assets held within a business model and how those risks are managed; and
- The frequency and volume of sales in prior periods and expectations about future sales activity.

Contractual cash flow characteristics assessment
The contractual cash flow characteristics assessment involves assessing the contractual features of an instrument to determine if they give rise to cash flows that are consistent with a basic lending arrangement. Contractual cash flows are consistent with a basic lending arrangement if they represent cash flows that are solely payments of principal and interest on the principal amount outstanding (SPPI).

Principal is defined as the fair value of the instrument at initial recognition. Principal may change over the life of the instrument due to repayments or amortization of premium/discount.

Interest is defined as the consideration for the time value of money and the credit risk associated with the principal amount outstanding and for other basic lending risks and costs (liquidity risk and administrative costs), and a profit margin.

If the Bank identifies any contractual features that could significantly modify the cash flows of the instrument such that they are no longer consistent with a basic lending arrangement, the related financial asset is classified and measured at FVTPL.

Debt instruments measured at amortized cost
Debt instruments are measured at amortized cost if they are held within a business model whose objective is to hold for collection of contractual cash flows where those cash flows represent solely payments of principal and interest. After initial measurement, debt instruments in this category are carried at amortized cost. Interest income on these instruments is recognized in interest income using the effective interest rate method. The effective interest rate is the rate that discounts estimated future cash payments or receipts through the expected life of the financial asset to the gross carrying amount of a financial asset. Amortized cost is calculated by taking into account any discount or premium on acquisition, transaction costs and fees that are an integral part of the effective interest rate.

Impairment on debt instruments measured at amortized cost is calculated using the expected credit loss approach. Loans and debt securities measured at amortized cost are presented net of the allowance for credit losses (ACL) in the statement of financial position.

Debt instruments measured at FVOCI
Debt instruments are measured at FVOCI if they are held within a business model whose objective is to hold for collection of contractual cash flows and for selling financial assets, where the assets' cash flows represent payments that are solely payments of principal and interest. Subsequent to initial recognition, unrealized gains and losses on debt instruments measured at FVOCI are recorded in other comprehensive income (OCI), unless the instrument is designated in a fair value hedge relationship. When designated in a fair value hedge relationship, any changes in fair value due to changes in the hedged risk are recognized in Non-interest income in the Consolidated Statement of Income. Upon derecognition, realized gains and losses are reclassified from OCI and recorded in Non-interest income in the Consolidated Statement of Income on an average cost basis. Foreign exchange gains and losses that relate to the amortized cost of the debt instrument are recognized in the Consolidated Statement of Income. Premiums, discounts and related transaction costs are amortized over the expected life of the instrument to Interest income in the Consolidated Statement of Income using the effective interest rate method.

Impairment on debt instruments measured at FVOCI is calculated using the expected credit loss approach. The ACL on debt instruments measured at FVOCI does not reduce the carrying amount of the asset in the Consolidated Statement of Financial Position, which remains at its fair value. Instead, an amount equal to the allowance that would arise if the assets were measured at amortised cost is recognised in OCI with a corresponding charge to Provision for credit losses in the Consolidated Statement of Income. The accumulated allowance recognised in OCI is recycled to the Consolidated Statement of Income upon derecognition of the debt instrument.

Debt instruments measured at FVTPL
Debt instruments are measured at FVTPL if assets:

i) Are held for trading purposes;
ii) Are held as part of a portfolio managed on a fair value basis; or
iii) Whose cash flows do not represent payments that are solely payments of principal and interest.

These instruments are measured at fair value in the Consolidated Statement of Financial Position, with transaction costs recognized immediately in the Consolidated Statement of Income as part of Non-interest income. Realized and unrealized gains and losses are recognized as part of Non-interest income in the Consolidated Statement of Income.

Debt instruments designated at FVTPL
Financial assets classified in this category are those that have been designated by the Bank upon initial recognition, and once designated, the designation is irrevocable. The FVTPL designation is available only for those financial assets for which a reliable estimate of fair value can be obtained. Financial assets are designated at FVTPL if doing so eliminates or significantly reduces an accounting mismatch which would otherwise arise.

Financial assets designated at FVTPL are recorded in the Consolidated Statement of Financial Position at fair value. Changes in fair value are recognized in Non-interest income in the Consolidated Statement of Income.

Equity instruments
Equity instruments are classified into one of the following measurement categories:

- Fair value through profit or loss (FVTPL); or
- Elected at fair value through other comprehensive income (FVOCI).

Equity instruments measured at FVTPL
Equity instruments are measured at FVTPL, unless an election is made to designate them at FVOCI upon purchase, with transaction costs recognized immediately in the Consolidated Statement of Income as part of Non-interest income. Subsequent to initial recognition the changes in fair value are recognized as part of Non-interest income in the Consolidated Statement of Income.

Equity instruments measured at FVOCI
At initial recognition, there is an irrevocable option for the Bank to classify non-trading equity instruments at FVOCI. This election is used for certain equity investments for strategic or longer term investment purposes. This election is made on an instrument-by-instrument basis and is not available to equity instruments that are held for trading purposes.

Gains and losses on these instruments including when derecognized/sold are recorded in OCI and are not subsequently reclassified to the Consolidated Statement of Income. As such, there is no specific impairment requirement. Dividends received are recorded in Interest income in the Consolidated Statement of Income. Any transaction costs incurred upon purchase of the security are added to the cost basis of the security and are not reclassified to the Consolidated Statement of Income on sale of the security.

Classification and measurement of financial liabilities
Financial liabilities are classified into one of the following measurement categories:

- Fair value through profit or loss (FVTPL);
- Amortized cost; or
- Designated at FVTPL.

Financial liabilities measured at FVTPL
Financial liabilities measured at FVTPL are held principally for the purpose of repurchasing in the near term, or form part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of short term profit-taking. Financial liabilities are recognized on a trade date basis and are accounted for at fair value, with changes in fair value and any gains or losses recognized in the Consolidated Statement of Income as part of the non-interest income. Transaction costs are expensed as incurred.

Financial liabilities measured at amortized cost
Deposits, subordinated notes and debentures are accounted for at amortized cost. Interest on deposits, calculated using the effective interest rate method, is recognized as interest expense. Interest on subordinated notes and debentures, including capitalized transaction costs, is recognized using the effective interest rate method as interest expense.

Financial liabilities designated at FVTPL
Financial liabilities classified in this category are those that have been designated by the Bank upon initial recognition, and once designated, the designation is irrevocable. The FVTPL designation is available only for those financial liabilities for which a reliable estimate of fair value can be obtained.

Financial liabilities are designated at FVTPL when one of the following criteria is met:

- The designation eliminates or significantly reduces an accounting mismatch which would otherwise arise; or
- A group of financial liabilities are managed and their performance is evaluated on a fair value basis, in accordance with a documented risk management strategy; or
- The financial liability contains one or more embedded derivatives which significantly modify the cash flows otherwise required.

Financial liabilities designated at FVTPL are recorded in the Consolidated Statement of Financial Position at fair value. Any changes in fair value are recognized in Non-interest income in the Consolidated Statement of Income, except for changes in fair value arising from changes in the Bank's own credit risk which are recognized in the OCI. Changes in fair value due to changes in the Bank's own credit risk are not subsequently reclassified to Consolidated Statement of Income upon derecognition/extinguishment of the liabilities.

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Determination of fair value
Fair value of a financial asset or liability is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants in the principal, or in its absence, the most advantageous market to which the Bank has access at the measurement date.

The Bank values instruments carried at fair value using quoted market prices, where available. Unadjusted quoted market prices for identical instruments represent a Level 1 valuation. When quoted market prices are not available, the Bank maximizes the use of observable inputs within valuation models. When all significant inputs are observable, the valuation is classified as Level 2. Valuations that require the significant use of unobservable inputs are considered Level 3.

Inception gains and losses are only recognized where the valuation is dependent only on observable market data, otherwise, they are deferred and amortized over the life of the related contract or until the valuation inputs become observable.

IFRS 13 permits a measurement exception that allows an entity to determine the fair value of a group of financial assets and liabilities with offsetting risks based on the sale or transfer of its net exposure to a particular risk (or risks). The Bank has adopted this exception through an accounting policy choice. Consequently, the fair values of certain portfolios of financial instruments are determined based on the net exposure of those instruments to particular market, credit or funding risk.

In determining fair value for certain instruments or portfolios of instruments, valuation adjustments or reserves may be required to arrive at a more accurate representation of fair value. These adjustments include those made for credit risk, bid-offer spreads, unobservable parameters, constraints on prices in inactive or illiquid markets and when applicable funding costs.

Derecognition of financial assets and liabilities

Derecognition of financial assets
The derecognition criteria are applied to the transfer of part of an asset, rather than the asset as a whole, only if such part comprises specifically identified cash flows from the asset, a fully proportionate share of the cash flows from the asset, or a fully proportionate share of specifically identified cash flows from the asset.

A financial asset is derecognized when the contractual rights to the cash flows from the asset has expired; or the Bank transfers the contractual rights to receive the cash flows from the financial asset; or has assumed an obligation to pay those cash flows to an independent third-party; or the Bank has transferred substantially all the risks and rewards of ownership of that asset to an independent third-party. Management determines whether substantially all the risk and rewards of ownership have been transferred by quantitatively comparing the variability in cash flows before and after the transfer. If the variability in cash flows remains significantly similar subsequent to the transfer, the Bank has retained substantially all of the risks and rewards of ownership.

Where substantially all the risks and rewards of ownership of the financial asset are neither retained nor transferred, the Bank derecognizes the transferred asset only if it has lost control over that asset. Control over the asset is represented by the practical ability to sell the transferred asset. If the Bank retains control over the asset, it will continue to recognize the asset to the extent of its continuing involvement. At times such continuing involvement may be in the form of investment in senior or subordinated tranches of notes issued by non-consolidated structured entities.

On derecognition of a financial asset, the difference between the carrying amount and the sum of (i) the consideration received (including any new asset obtained less any new liability assumed) and (ii) any cumulative gain or loss that had been recognized in other comprehensive income is recognized in the Consolidated Statement of Income.

Transfers of financial assets that do not qualify for derecognition are reported as secured financings in the Consolidated Statement of Financial Position.

Derecognition of financial liabilities
A financial liability is derecognized when the obligation under the liability is discharged, canceled or expires. If an existing financial liability is replaced by another from the same counterparty on substantially different terms, or the terms of the existing liability are substantially modified, such an exchange or modification is treated as a derecognition of the original liability and the recognition of a new liability at fair value. The difference in the respective carrying amount of the existing liability and the new liability is recognized as a gain/loss in the Consolidated Statement of Income.

Impairment

Scope
The Bank applies a three-stage approach to measure allowance for credit losses, using an expected credit loss approach as required under IFRS 9, for the following categories of financial instruments that are not measured at fair value through profit or loss:

- Amortized cost financial assets;
- Debt securities classified as at FVOCI;
- Off-balance sheet loan commitments; and
- Financial guarantee contracts.

Expected credit loss impairment model
The Bank's allowance for credit losses calculations are outputs of models with a number of underlying assumptions regarding the choice of variable inputs and their interdependencies. The expected credit loss impairment model reflects the present value of all cash shortfalls related to default events either (i) over the following twelve months or (ii) over the expected life of a financial instrument depending on credit deterioration from inception. The allowance for credit losses reflects an unbiased, probability-weighted outcome which considers multiple scenarios based on reasonable and supportable forecasts.

This impairment model measures credit loss allowances using a three-stage approach based on the extent of credit deterioration since origination:

- Stage 1 – Where there has not been a significant increase in credit risk (SIR) since initial recognition of a financial instrument, an amount equal to 12 months expected credit loss is recorded. The expected credit loss is computed using a probability of default occurring over the next 12 months. For those instruments with a remaining maturity of less than 12 months, a probability of default corresponding to remaining term to maturity is used.

- Stage 2 – When a financial instrument experiences a SIR subsequent to origination but is not considered to be in default, it is included in Stage 2. This requires the computation of expected credit loss based on the probability of default over the remaining estimated life of the financial instrument.
- Stage 3 – Financial instruments that are considered to be in default are included in this stage. Similar to Stage 2, the allowance for credit losses captures the lifetime expected credit losses.

Measurement of expected credit loss
The probability of default (PD), exposure at default (EAD), and loss given default (LGD) inputs used to estimate expected credit losses are modelled based on macroeconomic variables that are most closely related with credit losses in the relevant portfolio.
Details of these statistical parameters/inputs are as follows:

- PD – The probability of default is an estimate of the likelihood of default over a given time horizon. A default may only happen at a certain time over the remaining estimated life, if the facility has not been previously derecognized and is still in the portfolio.
- EAD – The exposure at default is an estimate of the exposure at a future default date, taking into account expected changes in the exposure after the reporting date, including repayments of principal and interest, whether scheduled by contract or otherwise, expected drawdowns on committed facilities, and accrued interest from missed payments.
- LGD – The loss given default is an estimate of the loss arising in the case where a default occurs at a given time. It is based on the difference between the contractual cash flows due and those that the lender would expect to receive, including from the realization of any collateral. It is usually expressed as a percentage of the EAD.

Forward-looking information
The estimation of expected credit losses for each stage and the assessment of significant increases in credit risk consider information about past events and current conditions as well as reasonable and supportable forecasts of future events and economic conditions. The estimation and application of forward-looking information may require significant judgment.

Macroeconomic factors
In its models, the Bank relies on a broad range of forward-looking economic information as inputs, such as: GDP growth, unemployment rates, central-bank interest rates, and house-price indices. The inputs and models used for calculating expected credit losses may not always capture all characteristics of the market at the date of the financial statements. To reflect this, qualitative adjustments or overlays may be made as temporary adjustments using expert credit judgment.

Multiple forward-looking scenarios
The Bank determines its allowance for credit losses using three probability-weighted forward-looking scenarios. The Bank considers both internal and external sources of information and data in order to achieve an unbiased projections and forecasts. The Bank prepares the scenarios using forecasts generated by Scotiabank Economics (SE). The forecasts are created using internal and external models which are modified by SE as necessary to formulate a 'base case' view of the most probable future direction of relevant economic variables as well as a representative range of other possible forecast scenarios. The process involves the development of two additional economic scenarios and consideration of the relative probabilities of each outcome.

The 'base case' represents the most likely outcome and is aligned with information used by the Bank for other purposes such as strategic planning and budgeting. The other scenarios represent more optimistic and more pessimistic outcomes. The Bank has identified and documented key drivers of credit risk and credit losses for each portfolio of financial instruments and, using an analysis of historical data, has estimated relationships between macroeconomic variables, credit risk, and credit losses.

Assessment of significant increase in credit risk (SIR)
At each reporting date, the Bank assesses whether there has been a significant increase in credit risk for exposures since initial recognition by comparing the risk of default occurring over the remaining expected life from the reporting date and the date of initial recognition. The assessment considers borrower-specific quantitative and qualitative information without consideration of collateral, and the impact of forward-looking macroeconomic factors.

The common assessments for SIR on retail and non-retail portfolios include macroeconomic outlook, management judgement, and delinquency and monitoring. Forward-looking macroeconomic factors are a key component of the macroeconomic outlook. The importance and relevance of each specific macroeconomic factor depends on the type of product, characteristics of the financial instruments and the borrower and the geographical region. Quantitative models may not always be able to capture all reasonable and supportable information that may indicate a significant increase in credit risk. Qualitative factors may be assessed to supplement the gap. Examples of situations include changes in adjudication criteria for a particular group of borrowers; changes in portfolio composition; and natural disasters impacting certain portfolios. With regards to delinquency and monitoring, there is a rebuttable presumption that the credit risk of the financial instrument has increased since initial recognition when contractual payments are more than 30 days overdue.

Retail portfolio – For retail exposures, a significant increase in credit risk cannot be assessed using forward looking information at an individual account level. Therefore, the assessment must be done at the segment level. Segment migration thresholds exist for each PD model by product which considers the proportionate change in PD as well as the absolute change in PD. The thresholds used for PD migration are reviewed and assessed at least annually, unless there is a significant change in credit risk management practices in which case the review is brought forward.

Non-retail portfolio – The Bank uses a risk rating scale (IG codes) for its non-retail exposures. All non-retail exposures have an IG code assigned that reflects the probability of default of the borrower. Both borrower specific and non-borrower specific (i.e. macroeconomic) forward looking information is considered and reflected in the IG rating. Significant increase in credit risk is evaluated based on the migration of the exposures among IG codes.

Expected life
When measuring expected credit loss, the Bank considers the maximum contractual period over which the Bank is exposed to credit risk. All contractual terms are considered when determining the expected life, including prepayment, and extension and rollover options. For certain revolving credit facilities, such as credit cards, the expected life is estimated based on the period over which the Bank is exposed to credit risk and how the credit losses are mitigated by management actions.

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Presentation of allowance for credit losses in the Statement of Financial Position

- Financial assets measured at amortized cost: as a deduction from the gross carrying amount of the financial assets;
- Debt instruments measured at fair value through other comprehensive income: no allowance is recognized in the Statement of Financial Position because the carrying value of these assets is their fair value. However, the allowance determined is presented in the accumulated other comprehensive income;
- Off-balance sheet credit risks include undrawn lending commitments, letters of credit and letters of guarantee: as a provision in other liabilities.

Modified financial assets
If the terms of a financial asset are modified or an existing financial asset is replaced with a new one, an assessment is made to determine if the existing financial asset should be derecognized. Where a modification does not result in derecognition, the date of origination continues to be used to determine SIR. Where a modification results in derecognition, the new financial asset is recognized at its fair value on the modification date. The modification date is also the date of origination for this new asset.

The Bank may modify the contractual terms of loans for either commercial or credit reasons. The terms of a loan in good standing may be modified for commercial reasons to provide competitive pricing to borrowers. Loans are also modified for credit reasons where the contractual terms are modified to grant a concession to a borrower that may be experiencing financial difficulty.

For all financial assets modifications of the contractual terms may result in derecognition of the original asset when the changes to the terms of the loans are considered substantial. These terms include interest rate, authorized amount, term, or type of underlying collateral. The original loan is derecognized and the new loan is recognized at its fair value. The difference between the carrying value of the derecognized asset and the fair value of the new asset is recognized in the Income Statement.

For all loans, performing and credit-impaired, where the modification of terms did not result in the derecognition of the loan, the gross carrying amount of the modified loan is recalculated based on the present value of the modified cash flows discounted at the original effective interest rate and any gain or loss from the modification is recorded in the provision for credit losses line in the income statement.

Definition of default
The Bank considers a financial instrument to be in default as a result of one or more loss events that occurred after the date of initial recognition of the instrument and the loss event has a negative impact on the estimated future cash flows of the instrument that can be reliably estimated. This includes events that indicate:

- significant financial difficulty of the borrower;
- default or delinquency in interest or principal payments;
- high probability of the borrower entering a phase of bankruptcy or a financial reorganization;
- measurable decrease in the estimated future cash flows from the loan or the underlying assets that back the loan.

The Bank considers that default has occurred and classifies the financial asset as impaired when it is more than 90 days past due, with the exception of credit card receivables that are treated as defaulted when 180 days past due, unless reasonable and supportable information demonstrates that a more lagging default criterion is appropriate.

Write-off policy
The Bank writes off an impaired financial asset (and the related impairment allowance), either partially or in full, when there is no realistic prospect of recovery. Where financial assets are secured, write-off is generally after receipt of any proceeds from the realization of security. In circumstances where the net realizable value of any collateral has been determined and there is no reasonable expectation of further recovery, write-off may be earlier. Credit card receivables 180 days past due are written-off. In subsequent periods, any recoveries of amounts previously written off are credited to the provision for credit losses in the Consolidated Statement of Income.

Purchased loans
All purchased loans are initially measured at fair value on the date of acquisition. As a result no allowance for credit losses would be recorded in the Consolidated Statement of Financial Position on the date of acquisition. Purchased loans may fit into either of the two categories: Performing loans or Purchased Credit Impaired (PCI) loans.

Purchased performing loans follow the same accounting as originated performing loans and are reflected in Stage 1 on the date of the acquisition. They will be subject to a 12-month allowance for credit losses which is recorded as a provision for credit losses in the Consolidated Statement of Income. The fair value adjustment set up for these loans on the date of acquisition is amortized into interest income over the life of these loans.

PCI loans are reflected in Stage 3 and are always subject to lifetime allowance for credit losses. Any changes in the expected cash flows since the date of acquisition are recorded as a charge/recovery in the provision for credit losses in the Consolidated Statement of Income at the end of all reporting periods subsequent to the date of acquisition.

Classification and measurement, derecognition, and impairment of financial instruments effective prior to November 1, 2017

Trading assets and liabilities
Trading assets and liabilities are measured at fair value in the Consolidated Statement of Financial Position, with transaction costs recognized immediately in the Consolidated Statement of Income as part of non-interest income – trading revenues. Gains and losses realized on disposal and unrealized gains and losses due to fair value changes on trading assets and liabilities, other than certain derivatives, are recognized as part of non-interest income – trading revenues in the Consolidated Statement of Income. Trading assets and liabilities are not reclassified subsequent to their initial recognition.

Investment securities
Investment securities are comprised of available-for-sale and held-to-maturity securities.

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Available-for-sale investment securities
Available-for-sale investment securities include equity and debt securities. Equity investments classified as available-for-sale are those which are neither classified as held-for-trading nor designated at fair value through profit or loss. Debt securities in this category are those which are intended to be held for an indefinite period of time and which may be sold in response to needs for liquidity or in response to changes in the market conditions.

Available-for-sale investment securities are recorded at fair value with unrealized gains and losses recorded in other comprehensive income. When realized, these gains and losses are reclassified from the Consolidated Statement of Comprehensive Income and recorded in the Consolidated Statement of Income on an average cost basis. For non-monetary investment securities designated as available-for-sale, the gain or loss recognized in other comprehensive income includes any related foreign exchange gains or losses. Foreign exchange gains and losses that relate to the amortized cost of an available-for-sale debt security are recognized in the Consolidated Statement of Income.

Premiums, discounts and related transaction costs on available-for-sale debt securities are amortized over the expected life of the instrument to interest income – securities in the Consolidated Statement of Income using the effective interest method.

Transaction costs on available-for-sale equity securities are initially capitalized and then recognized as part of the net realized gain/loss on subsequent sale of the instrument in the Consolidated Statement of Income.

Held-to-maturity investment securities
Held-to-maturity investment securities are non-derivative assets with fixed or determinable payments and fixed maturity that the Bank has the positive intent and ability to hold to maturity, and which do not meet the definition of a loan, are not held-for-trading, and are not designated at fair value through profit or loss or as available-for-sale. After initial measurement, held-to-maturity investment securities are carried at amortized cost using the effective interest method, less impairment. Amortized cost is calculated by taking into account any discount or premium on acquisition, transaction costs and fees that are an integral part of the effective interest rate. The amortization is included in interest income – securities in the Consolidated Statement of Income.

A sale or reclassification of a more than an insignificant amount of held-to-maturity investments would result in the reclassification of all held-to-maturity investments as available-for-sale, and would prevent the Bank from classifying investment securities as held-to-maturity for the current and the following two financial years. However, sales and reclassifications in any of the following circumstances would not trigger a reclassification:

- Sales or reclassifications that are so close to maturity that changes in the market rate of interest would not have a significant effect on the financial asset's fair value;
- Sales or reclassifications after the Bank has collected substantially all of the asset's original principal; or
- Sales or reclassifications attributable to non-recurring isolated events beyond the Bank's control that could not have been reasonably anticipated.

Impairment of investment securities
Investment securities are evaluated for impairment at the end of each reporting period, or more frequently if events or changes in circumstances indicate the existence of objective evidence of impairment.

In the case of equity instruments classified as available-for-sale, a significant or prolonged decline in the fair value of the security below its original cost is objective evidence of impairment. In the case of debt instruments classified as available-for-sale and held-to-maturity investment securities, impairment is assessed based on the same criteria as impairment of loans.

When a decline in value of available-for-sale debt or equity instrument is due to impairment, the carrying value of the security continues to reflect fair value. Losses arising from impairment are reclassified from accumulated other comprehensive income and included in net gain on investment securities within non-interest income in the Consolidated Statement of Income.

The losses arising from impairment of held-to-maturity investment securities are recognized in net gain on investment securities within non-interest income in the Consolidated Statement of Income.

Reversals of impairment losses on available-for-sale debt instruments resulting from increases in fair value related to events occurring after the date of impairment are included in net gain on investment securities within non-interest income in the Consolidated Statement of Income, to a maximum of the original impairment charge. Reversals of impairment on available-for-sale equity instruments are not recognized in the Consolidated Statement of Income; increases in fair value of such instruments after impairment are recognized in accumulated other comprehensive income.

Reversals of impairment losses on held-to-maturity investment securities are included in net gain on investment securities within non-interest income in the Consolidated Statement of Income, to a maximum of the amortized cost of the investment before the original impairment charge.

Financial assets and liabilities designated at fair value through profit or loss
Financial assets and financial liabilities classified in this category are those that have been designated by the Bank on initial recognition. The Bank may only designate an instrument at fair value through profit or loss when one of the following criteria is met, and designation is determined on an instrument by instrument basis:

- The designation eliminates or significantly reduces the inconsistent treatment that would otherwise arise from measuring the assets or liabilities on a different basis; or
- The assets and liabilities are part of a group of financial assets, financial liabilities or both which are managed together and their performance evaluated on a fair value basis, in accordance with a documented risk management or investment strategy and the information about the group is provided to key management personnel and it can be demonstrated that significant financial risks are eliminated or significantly reduced; or
- The financial instrument contains one or more embedded derivatives which significantly modify the cash flows otherwise required.

Financial assets and financial liabilities designated at fair value through profit or loss are recorded in the Consolidated Statement of Financial Position at fair value. For assets designated at fair value through profit or loss, changes in fair value are recognized in the Consolidated Statement of Income. For liabilities designated at fair value through profit or loss, changes in fair value arising from changes in the Bank's own credit risk are recognized in the Consolidated Statement of Comprehensive Income (OCI), without subsequent reclassification to the Consolidated Statement of Income, unless doing so would create or increase an accounting mismatch. All other changes in fair value are recognized in the Consolidated Statement of Income.

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Loans
Loans include loans and advances originated or purchased by the Bank which are not classified as held-for-trading, held-to-maturity or designated at fair value. Debt securities, which are not trading securities or have not been designated as available-for-sale securities and that are not quoted in an active market, are also classified as loans.

Loans originated by the Bank are recognized when cash is advanced to a borrower. Loans purchased are recognized when cash consideration is paid by the Bank. Loans are measured at amortized cost using the effective interest method, less any impairment losses. Loans are stated net of allowance for credit losses.

Derecognition of financial assets and liabilities

Derecognition of financial assets
The derecognition criteria are applied to the transfer of part of an asset, rather than the asset as a whole, only if such part comprises specifically identified cash flows from the asset, a fully proportionate share of the cash flows from the asset, or a fully proportionate share of specifically identified cash flows from the asset.

A financial asset is derecognized when the contractual rights to the cash flows from the asset has expired; or the Bank transfers the contractual rights to receive the cash flows from the financial asset; or has assumed an obligation to pay those cash flows to an independent third-party; or the Bank has transferred substantially all the risks and rewards of ownership of that asset to an independent third-party. Management determines whether substantially all the risk and rewards of ownership have been transferred by quantitatively comparing the variability in cash flows before and after the transfer. If the variability in cash flows remains significantly similar subsequent to the transfer, the Bank has retained substantially all of the risks and rewards of ownership.

Where substantially all the risks and rewards of ownership of the financial asset are neither retained nor transferred, the Bank derecognizes the transferred asset only if it has lost control over that asset. Control over the asset is represented by the practical ability to sell the transferred asset. If the Bank retains control over the asset, it will continue to recognize the asset to the extent of its continuing involvement. At times such continuing involvement may be in the form of investment in senior or subordinated tranches of notes issued by non-consolidated structured entities.

On derecognition of a financial asset, the difference between the carrying amount and the sum of (i) the consideration received (including any new asset obtained less any new liability assumed) and (ii) any cumulative gain or loss that had been recognized in other comprehensive income is recognized in the Consolidated Statement of Income.

Transfers of financial assets that do not qualify for derecognition are reported as secured financings in the Consolidated Statement of Financial Position.

Derecognition of financial liabilities
A financial liability is derecognized when the obligation under the liability is discharged, canceled or expires. If an existing financial liability is replaced by another from the same counterparty on substantially different terms, or the terms of the existing liability are substantially modified, such an exchange or modification is treated as a derecognition of the original liability and the recognition of a new liability at fair value. The difference in the respective carrying amount of the existing liability and the new liability is recognized as a gain/loss in the Consolidated Statement of Income.

Loan impairment and allowance for credit losses:
The Bank considers a loan to be impaired when there is objective evidence of impairment as a result of one or more loss events that occurred after the date of initial recognition of the loan and the loss event has an impact on the estimated future cash flows of the loan that can be reliably estimated.

Objective evidence is represented by observable data that comes to the attention of the Bank and includes events that indicate:

- significant financial difficulty of the borrower;
- a default or delinquency in interest or principal payments;
- a high probability of the borrower entering a phase of bankruptcy or a financial reorganization;
- a measurable decrease in the estimated future cash flows from the loan or the underlying assets that back the loan.

If a payment on a loan is contractually 90 days in arrears, the loan will be classified as impaired, if not already classified as such, unless the loan is fully secured, the collection of the debt is in process, and the collection efforts are reasonably expected to result in repayment of the loan or in restoring it to a current status within 180 days from the date a payment has become contractually in arrears. Finally, a loan that is contractually 180 days in arrears is classified as impaired in all situations, except when it is guaranteed or insured by the Canadian government, the provinces or a Canadian government agency; such loans are classified as impaired if the loan is contractually in arrears for 365 days. Any credit card loan that has a payment that is contractually 180 days in arrears is written off.

Losses expected as a result of future events are not recognized.

The Bank considers evidence of impairment for loans and advances at both an individual and collective level.

Individual impairment allowance
For all loans that are considered individually significant, the Bank assesses on a case-by-case basis at each reporting period whether an individual allowance for loan losses is required.

For those loans where objective evidence of impairment exists and the Bank has determined the loan to be impaired, impairment losses are determined based on the Bank's aggregate exposure to the customer considering the following factors:

- the customer's ability to generate sufficient cash flow to service debt obligations;
- the extent of other creditors' commitments ranking ahead of, or pari passu with, the Bank and the likelihood of other creditors continuing to support the company;
- the complexity of determining the aggregate amount and ranking of all creditor claims and the extent to which legal and insurance uncertainties are evident; and
- the realizable value of security (or other credit mitigants) and likelihood of successful repossession.

Impairment losses are calculated by discounting the expected future cash flows of a loan at its original effective interest rate, and comparing the resultant present value with the loan's current carrying amount. This results in interest income being recognized using the original effective interest rate.

Collective impairment allowance
For loans that have not been individually assessed as being impaired, the Bank pools them into groups to assess them on a collective basis. Collective allowances are calculated for impaired loans and performing loans. Allowances related to performing loans estimate probable incurred losses that are inherent in the portfolio but have not yet been specifically identified as impaired.

Internal risk rating parameters are used in the calculation of the collective impairment allowance. For non-retail loan portfolios, internal risk rating parameters form the basis for calculating the quantitative portion of the collective allowance for performing loans:

- Probability of Default rates (PD) which are based upon the internal risk rating for each borrower;
- Loss Given Default rates (LGD); and
- Exposure at Default factors (EAD).

Funded exposures are multiplied by the borrower's PD and by the relevant LGD parameter.

Committed but undrawn exposures are multiplied by the borrower's PD, by the relevant LGD parameter, and by the relevant EAD parameter. A model stress component is also applied to recognize uncertainty in the credit risk parameters and the fact that current actual loss rates may differ from the long-term averages included in the model.

Retail loans
Retail loans represented by residential mortgages, credit cards and other personal loans are considered by the Bank to be homogeneous groups of loans that are not considered individually significant. All homogeneous groups of loans are assessed for impairment on a collective basis.

Mortgages are collectively assessed for impairment, taking into account number of days past due, historical loss experience and incorporating both quantitative and qualitative factors including the current business and economic environment and the realizable value of collateral to determine the appropriate level of the collective impairment allowance.

A roll rate methodology is used to determine impairment losses on a collective basis for credit cards and other personal loans because individual loan assessment is impracticable. Under this methodology, loans with similar credit characteristics are grouped into ranges according to the number of days past due and statistical analysis is used to estimate the likelihood that loans in each range will progress through the various stages of delinquency and ultimately prove irrecoverable. This methodology employs statistical analyses of historical data and experience of delinquency and default to estimate the amount of loans that will eventually be written off as a result of the events not identifiable on an individual loan basis. When the portfolio size is small or when information is insufficient or not reliable enough to adopt a roll rate methodology, the Bank adopts a basic formulaic approach based on historical loss rate experience.

Performing loans
Over and above the individually assessed and retail roll rate allowances, loans that were subject to individual assessment for which no evidence of impairment existed, are grouped together according to their credit risk characteristics for the purpose of reassessing them on a collective basis. This reflects impairment losses that the Bank has incurred as a result of events that have occurred but where the individual loss has not been identified.

The collective impairment allowance for such loans is determined after taking into account:

- historical loss experience in portfolios of similar credit risk characteristics (for example, by industry sector, loan grade or product);
- the estimated period between impairment occurring and the loss being identified and evidenced by the establishment of an appropriate allowance against the individual loan; and
- management's experienced judgment as to whether current economic and credit conditions are such that the actual level of inherent losses at the reporting date is likely to be greater or less than that suggested by historical experience. As soon as information becomes available which identifies losses on individual loans within the group, those loans are removed from the group and assessed on an individual basis for impairment.

Provision for credit losses on off-balance sheet positions
A provision is set up for the Bank's off-balance sheet positions and recorded in other liabilities on the Consolidated Statement of Financial Position. The process to determine the provision for off-balance sheet positions is similar to the methodology used for loans. Any change in the provision is recorded in the Consolidated Statement of Income as provision for credit losses.

Write-off of loans
Loans (and the related impairment allowance accounts) are normally written off, either partially or in full, when there is no realistic prospect of recovery. Where loans are secured, write-off is generally after receipt of any proceeds from the realization of security. In circumstances where the net realizable value of any collateral has been determined and there is no reasonable expectation of further recovery, write-off may be earlier.

Reversals of impairment
If the amount of an impairment loss related to loans decreases in a subsequent period, and the decrease can be related objectively to an event occurring after the impairment was recognized, the excess is written back by reducing the loan impairment allowance account accordingly. The write-back is recognized in the provision for credit losses in the Consolidated Statement of Income.

Restructured loans
Restructured loans include loans where the Bank has renegotiated the original terms of a loan by granting a concession to the borrower (concessions). These concessions include interest rate adjustments, deferral or extension of principal or interest payments and forgiveness of a portion of principal or interest. Once the terms of the loan have been renegotiated and agreed upon with the borrower the loan is considered a restructured loan. The investment in the loan is reduced as of the date of the restructuring to the amount of the net expected cash flows receivable under the modified terms, discounted at the original effective interest rate inherent in the loan. The loan is no longer considered past due and the reduction in the carrying value of the loan is recognized as a charge for loan impairment in the Consolidated Statement of Income in the period in which the loan is restructured. In other cases, restructuring may be considered substantial enough to result in recognition of a new loan.

Offsetting of financial instruments
Financial assets and financial liabilities with the same counterparty are offset, with the net amount reported in the Consolidated Statement of Financial Position, only if there is currently a legally enforceable right to offset the recognized amounts and there is an intention to settle on a net basis, or to

realize the assets and settle the liabilities simultaneously. When financial assets and financial liabilities are offset in the Consolidated Statement of Financial Position, the related income and expense items will also be offset in the Consolidated Statement of Income, unless specifically prohibited by an applicable accounting standard.

Cash and deposits with financial institutions

Cash and deposits with financial institutions comprises cash, cash equivalents, demand deposits with banks and other financial institutions, highly liquid investments that are readily convertible to cash, subject to insignificant risk of changes in value. These investments are those with less than three months' maturity from the date of acquisition.

Precious metals

Precious metals are carried at fair value less costs to sell, and any changes in fair value less costs to sell are credited or charged to non-interest income – trading revenues in the Consolidated Statement of Income.

Securities purchased and sold under resale agreements

Securities purchased under resale agreements (reverse repurchase agreements) involve the Bank to purchase securities from a counterparty with an agreement entered to resell the securities at a fixed price at a future date. Since the Bank is reselling the securities at a fixed price at a future date, the risks and rewards have not been transferred to the Bank. The Bank has the right to liquidate the securities purchased in the event of counterparty default.

Whereas, securities sold under agreements to repurchase (repurchase agreements) involve the Bank to sell securities to a counterparty with an agreement entered simultaneously to purchase the securities back at a fixed price at a future date. Since the Bank is purchasing the securities back at a fixed price at a future date, the risks and rewards have not been transferred from the Bank. The counterparty has the right to use the collateral pledged by the Bank in the event of default.

These agreements are treated as collateralized financing arrangements and are initially recognized at amortized cost. The party disbursing the cash takes possession of the securities serving as collateral for the financing and having a market value equal to, or in excess of, the principal amount loaned. The securities received under reverse repurchase agreements and securities delivered under repurchase agreements are not recognized on, or derecognized from, the Consolidated Statement of Financial Position, unless the risks and rewards of ownership are obtained or relinquished. The related interest income and interest expense are recorded on an accrual basis using the effective interest rate method in interest income on the Consolidated Statement of Income.

Obligations related to securities sold short

Obligations related to securities sold short arise in dealing and market-making activities where debt securities and equity shares are sold without possessing such securities.

Similarly, if securities purchased under an agreement to resell are subsequently sold to third parties, the obligation to return the securities is recorded as a short sale within obligations related to securities sold short in the Consolidated Statement of Financial Position. These trading liabilities are measured at fair value with any gains or losses included in non-interest income – trading revenues in the Consolidated Statement of Income. Interest expense accruing on debt securities sold short is recorded in interest expense – other, in the Consolidated Statement of Income.

Securities lending and borrowing

Securities lending and borrowing transactions are usually collateralized by securities or cash. The transfer of the securities to counterparties is only reflected on the Consolidated Statement of Financial Position if the risks and rewards of ownership are also transferred. For cash collateral advanced or received, the Bank presents these transactions as securities sold under repurchase agreement or securities purchased under reverse repurchase agreement, respectively. Interest on cash collateral advanced or received is presented in interest income – securities purchased under resale agreements and securities borrowed or interest expense – other, respectively. Fees received and paid are reported as fee and commission revenues and expenses in the Consolidated Statement of Income, respectively.

Securities borrowed are not recognized on the Consolidated Statement of Financial Position, unless they are then sold to third parties, in which case the obligation to return the securities is recorded as a trading liability and measured at fair value with any gains or losses included in non-interest income – trading revenues, in the Consolidated Statement of Income.

Derivative instruments

Derivative instruments are contracts whose value is derived from interest rates, foreign exchange rates, commodities, equity prices or other financial variables. Most derivative instruments can be characterized as interest rate contracts, foreign exchange and gold contracts, commodity contracts, equity contracts or credit contracts. Derivative instruments are either exchange-traded contracts or negotiated over-the-counter contracts. Negotiated over-the-counter contracts include swaps, forwards and options.

The Bank enters into these derivative contracts for trading purposes, as well as to manage its risk exposures (i.e., to manage the Bank's non-trading interest rate, foreign currency and other exposures). Trading activities are undertaken to meet the needs of the Bank's customers, as well as for the Bank's own account to generate income from trading operations.

Derivatives embedded in other financial liabilities or host contracts are treated as separate derivatives when the following conditions are met:

- their economic characteristics and risks are not closely related to those of the host contract;
- a separate instrument with the same terms as the embedded derivative would meet the definition of a derivative; and
- the combined contract is not held for trading or designated at fair value through profit or loss.

Where an embedded derivative is separable from the host contract but the fair value, as at the acquisition or reporting date, cannot be reliably measured separately, the entire combined contract is measured at fair value. All embedded derivatives are presented on a combined basis with the host contracts although they are separated for measurement purposes when conditions requiring separation are met. Subsequent changes in fair value of embedded derivatives are recognized in non-interest income in the Consolidated Statement of Income.

All derivatives, including embedded derivatives that must be separately accounted for, are recorded at fair value in the Consolidated Statement of Financial Position. The determination of the fair value of derivatives includes consideration of credit risk, estimated funding costs and ongoing direct costs over the life of the instruments. Inception gains or losses on derivatives are only recognized where the valuation is dependent only on observable market data, otherwise, they are deferred and amortized over the life of the related contract, or until the valuation inputs become observable.

The gains and losses resulting from changes in fair values of trading derivatives are included in non-interest income – trading revenues in the Consolidated Statement of Income.

Changes in the fair value of non-trading derivatives that do not qualify for hedge accounting are recorded in the Consolidated Statement of Income in non-interest income – other. Where derivative instruments are used to manage the volatility of share-based payment expense, these derivatives are carried at fair value with changes in the fair value in relation to units hedged included in non-interest expenses – salaries and employee benefits in the Consolidated Statement of Income.

Changes in the fair value of derivatives that qualify for hedge accounting are recorded as non-interest income – other in the Consolidated Statement of Income for fair value hedges and other comprehensive income in the Consolidated Statement of Comprehensive Income for cash flow hedges and net investment hedges.

Hedge accounting

The Bank has elected to continue to apply the hedge accounting requirements of IAS 39. However, the Bank has implemented the additional hedge accounting disclosures that are required by the IFRS 9 related amendments to IFRS 7 "*Financial Instruments: Disclosures*".

The Bank formally documents all hedging relationships and its risk management objective and strategy for undertaking these hedge transactions at inception. The hedge documentation includes identification of the asset, liability, firm commitment or highly probable forecasted transaction being hedged, the nature of the risk being hedged, the hedging instrument used and the method used to assess the effectiveness of the hedge. The Bank also formally assesses, both at each hedge's inception and on an ongoing basis, whether the hedging instruments are highly effective in offsetting changes in fair value or cash flows of the hedged items. Hedge ineffectiveness is measured and recorded in non-interest income – other in the Consolidated Statement of Income.

There are three types of hedges: (i) fair value hedges, (ii) cash flow hedges and (iii) net investment hedges.

Fair value hedges

For fair value hedges, the change in fair value of the hedging instrument is offset in the Consolidated Statement of Income by the change in fair value of the hedged item attributable to the hedged risk. For hedges that are discontinued, the hedged item is no longer adjusted for changes in fair value. The cumulative fair value adjustment of the hedged item is amortized to non-interest income over its remaining term to maturity or written off to non-interest income directly if the hedged item ceases to exist. The Bank utilizes fair value hedges primarily to convert fixed rate financial instruments to floating rate financial instruments. Hedged items include debt securities, loans, deposit liabilities and subordinated debentures. Hedging instruments include single-currency interest rate swaps and cross-currency interest rate swaps.

Cash flow hedges

For cash flow hedges, the change in fair value of the hedging instrument, to the extent effective, is recorded in other comprehensive income until the corresponding gains and losses on the hedged item is recognized in income. For hedges that are discontinued, the cumulative unrealized gain or loss recognized in other comprehensive income is reclassified to non-interest income and/or salaries and employee benefits as the variability in the cash flows of hedged item affects income. However, if the hedged item is derecognized or the forecasted transaction is no longer expected to occur, the unrealized gain or loss is reclassified immediately to non-interest income and/or salaries and employee benefits. The Bank utilizes cash flow hedges primarily to hedge the variability in cash flows relating to floating rate financial instruments and highly probable forecasted revenues and expenses. Hedged items include debt securities, loans, deposit liabilities and highly probable forecasted transactions. Hedging instruments include single-currency interest rate swaps, cross-currency interest rate swaps, total return swaps, foreign currency forwards and foreign currency assets or liabilities.

Net investment hedges

For net investment hedges, the change in fair value of the hedging instrument, to the extent effective, is recorded in other comprehensive income until the corresponding cumulative translation adjustments on the hedged net investment are recognized in income. The Bank designates foreign currency liabilities and foreign currency forwards as hedging instruments to manage the foreign currency exposure and impact on capital ratios arising from foreign operations.

Property and equipment

Land, buildings and equipment

Land is carried at cost. Buildings (including building fittings), equipment, and leasehold improvements are carried at cost less accumulated depreciation and accumulated impairment losses, if any. Cost includes expenditures that are directly attributable to the acquisition of the asset. Depreciation is calculated using the straight-line method over the estimated useful life of the related asset less any residual value as follows: buildings – 40 years, building fittings – 15 years, equipment 3 to 10 years, and leasehold improvements – lease term determined by the Bank. Depreciation expense is included in the Consolidated Statement of Income under non-interest expenses – depreciation and amortization. Depreciation methods, useful lives and residual values are reassessed at each financial year-end and adjusted as appropriate.

When major components of building and equipment have different useful lives, they are accounted for separately and depreciated over each component's estimated useful life.

Net gains and losses on disposal are included in non-interest income – other in the Consolidated Statement of Income in the year of disposal.

Investment property

Investment property is property held either for rental income or for capital appreciation or for both. The Bank holds certain investment properties which are presented in property and equipment on the Consolidated Statement of Financial Position.

Investment property is carried at cost less accumulated depreciation and any accumulated impairment losses. Depreciation is calculated using the straight-line method over the estimated useful life of 40 years. Depreciation methods, useful lives and residual values are reassessed at each financial year-end and adjusted as appropriate.

Assets held-for-sale

Non-current non-financial assets (and disposal groups) are classified as held-for-sale if their carrying amount will be recovered principally through a sale transaction rather than through continuing use. These assets meet the criteria for classification as held-for-sale if they are available for immediate sale in their present condition and their sale is considered highly probable to occur within one year.

Non-current non-financial assets classified as held-for-sale are measured at the lower of their carrying amount and fair value (less costs to sell) and are presented within other assets in the Consolidated Statement of Financial Position. Any subsequent write-down to fair value less costs to sell is recognized in the Consolidated Statement of Income, in non-interest income. Any subsequent increase in the fair value less costs to sell, to the extent this does not exceed the cumulative write-down, is also recognized in non-interest income, together with any realized gains or losses on disposal.

Non-financial assets acquired in exchange for loans as part of an orderly realization are recorded as assets held-for-sale or assets held-for-use. If the acquired asset does not meet the requirement to be considered held-for-sale, the asset is considered held-for-use, measured initially at cost which equals the carrying value of the loan and accounted for in the same manner as a similar asset acquired in the normal course of business.

Business combinations and goodwill

The Bank follows the acquisition method of accounting for the acquisition of subsidiaries. The Bank considers the date on which control is obtained and it legally transfers the consideration for the acquired assets and assumed liabilities of the subsidiary to be the date of acquisition. The cost of an acquisition is measured at the fair value of the consideration paid. The fair value of the consideration transferred by the Bank in a business combination is calculated as the sum of the acquisition date fair value of the assets transferred by the Bank, the liabilities incurred by the Bank to former owners of the acquiree, and the equity interests, including any options, issued by the Bank. The Bank recognizes the acquisition date fair values of any previously held investment in the subsidiary and contingent consideration as part of the consideration transferred in exchange for the acquisition. A gain or loss on any previously held investments of an acquiree is recognized in non-interest income – other in the Consolidated Statement of Income.

In general, all identifiable assets acquired (including intangible assets) and liabilities assumed (including any contingent liabilities) are measured at the acquisition date fair value. The Bank records identifiable intangible assets irrespective of whether the assets have been recognized by the acquiree before the business combination. Non-controlling interests, if any, are recognized at their proportionate share of the fair value of identifiable assets and liabilities, unless otherwise indicated. Where the Bank has an obligation to purchase a non-controlling interest for cash or another financial asset, a portion of the non-controlling interest is recognized as a financial liability based on management's best estimate of the present value of the redemption amount. Where the Bank has a corresponding option to settle the purchase of a non-controlling interest by issuing its own common shares, no financial liability is recorded.

Any excess of the cost of acquisition over the Bank's share of the net fair value of the identifiable assets acquired and liabilities assumed is recorded as goodwill. If the cost of acquisition is less than the fair value of the Bank's share of the identifiable assets acquired and liabilities assumed, the resulting gain is recognized immediately in non-interest income – other in the Consolidated Statement of Income.

During the measurement period (which is within one year from the acquisition date), the Bank may, on a retrospective basis, adjust the amounts recognized at the acquisition date to reflect new information obtained about facts and circumstances that existed as of the acquisition date.

The Bank accounts for acquisition-related costs as expenses in the periods in which the costs are incurred and the services are received.

Subsequent to acquisition, the Bank accounts for the following assets and liabilities recognized in a business combination as described below:

- Contingent liabilities, until resolved, are measured at the higher of the amount that would be recognized as a provision or the amount initially recognized, with any change recognized in the Consolidated Statement of Income.
- Indemnification assets are measured on the same basis as the item to which the indemnification relates.
- Contingent consideration classified as a liability is measured at fair value, with any change recognized in the Consolidated Statement of Income.
- Liabilities to non-controlling interest holders when remeasured at the end of each reporting period, a corresponding change is recorded in equity.

After initial recognition of goodwill in a business combination, goodwill in aggregate is measured at cost less any accumulated impairment losses. Goodwill is not amortized but tested for impairment annually and when circumstances indicate that the carrying value may be impaired.

Goodwill is reviewed at each reporting date to determine whether there is any indication of impairment. For the purpose of impairment testing, goodwill acquired in a business combination is, on the acquisition date, allocated to each of the Bank's group of cash-generating units (CGUs) that is expected to benefit from the combination. CGUs to which goodwill has been allocated are aggregated so that the level at which impairment is tested reflects the lowest level at which goodwill is monitored for internal management purposes. Goodwill impairment, at a standalone subsidiary level, may not in itself result in an impairment at the consolidated Bank level.

The Bank determines the carrying value of the CGU using a regulatory capital approach based on credit, market, and operational risks, and leverage, consistent with the Bank's capital attribution for business line performance measurement. The recoverable amount is the greater of fair value less costs of disposal and value in use. If either fair value less costs of disposal or value in use exceeds the carrying amount, there is no need to determine the other. The recoverable amount of the CGU has been determined using the fair value less costs of disposal method. The estimation of fair value less costs of disposal involves significant judgment in the determination of inputs. In determining fair value less costs of disposal, an appropriate valuation model is used which considers various factors including normalized net income, control premiums and price earnings multiples. These calculations are corroborated by valuation multiples, quoted share prices for publicly traded subsidiaries or other available fair value indicators. An impairment loss is recognized if the carrying amount of the CGU exceeds the recoverable amount. An impairment loss, in respect of goodwill, is not reversed.

Intangible assets

Intangible assets represent identifiable non-monetary assets and are acquired either separately or through a business combination or generated internally. The Bank's intangible assets are mainly comprised of computer software, customer relationships, contract intangibles, core deposit intangibles and fund management contracts.

The cost of a separately acquired intangible asset includes its purchase price and directly attributable costs of preparing the asset for its intended use. Intangibles acquired as part of a business combination are initially recognized at fair value.

In respect of internally generated intangible assets, cost includes all directly attributable costs necessary to create, produce, and prepare the asset to be capable of operating in the manner intended by management.

After initial recognition, an intangible asset is carried at its cost less any accumulated amortization and accumulated impairment losses.

Intangible assets that have finite useful lives are initially measured at cost and are amortized on a straight-line basis over their useful lives as follows: computer software – 5 to 10 years; and other intangible assets – 5 to 20 years. Amortization expense is included in the Consolidated Statement of Income under operating expenses – depreciation and amortization. As intangible assets are considered to be non-financial assets, the impairment model for non-financial assets is applied. Intangible assets with indefinite useful lives are not amortized but are tested for impairment annually and when circumstances indicate that the carrying value may be impaired.

Impairment of non-financial assets

The carrying amount of the Bank's non-financial assets, other than goodwill and indefinite life intangible assets and deferred tax assets which are separately addressed, is reviewed at each reporting date to determine whether there is any indication of impairment. For the purpose of impairment testing, non-financial assets that cannot be tested individually are grouped together into the smallest group of assets that generate cash inflows from continuing use that are largely independent from the cash inflows of other assets or groups of assets.

If any indication of impairment exists then the asset's recoverable amount is estimated. The recoverable amount of an asset or CGU is the greater of its value in use and its fair value less costs of disposal. The Bank's corporate assets do not generate separate cash inflows. If there is an indication that a corporate asset may be impaired, then the recoverable amount is determined for the CGU to which the corporate asset belongs.

An impairment loss is recognized if the carrying amount of an asset or a CGU exceeds its recoverable amount. Impairment losses of continuing operations are recognized in the Consolidated Statement of Income in those expense categories consistent with the nature of the impaired asset. Impairment losses recognized in prior periods are reassessed at each reporting date for any indication that the loss had decreased or no longer exists. An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortization, if no impairment loss had been recognized. Such reversal is recognized in the Consolidated Statement of Income.

Significant judgment is applied in determining the non-financial asset's recoverable amount and assessing whether certain events or circumstances constitute objective evidence of impairment.

Corporate income taxes

The Bank follows the balance sheet liability method for corporate income taxes. Under this method, deferred tax assets and liabilities represent the cumulative amount of tax applicable to temporary differences which are the differences between the carrying amount of the assets and liabilities, and their values for tax purposes. Deferred tax assets are recognized only to the extent it is probable that sufficient taxable profits will be available against which the benefit of these deferred tax assets can be utilized.

Deferred tax assets and liabilities are measured using enacted or substantively enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled.

Deferred and current tax assets and liabilities are only offset when they arise in the same tax reporting group and where the Bank has both the legal right and the intention to settle on a net basis or to realize the asset and settle the liability simultaneously.

The Bank maintains provisions for uncertain tax positions that it believes appropriately reflect the risk of tax positions under discussion, audit, dispute, or appeal with tax authorities, or which are otherwise considered to involve uncertainty. These provisions are made using the Bank's best estimate of the amount expected to be paid based on an assessment of all relevant factors, which are reviewed at the end of each reporting period.

Income tax is recognized in the Consolidated Statement of Income except where it relates to items recognized in other comprehensive income or directly in equity, in which case income tax is recognized in the same line as the related item.

Leases

Bank as a lessor

Assets leased to customers under agreements which transfer substantially all the risks and rewards of ownership, with or without ultimate legal title, are classified as finance leases and presented within loans in the Consolidated Statement of Financial Position. When assets held are subject to a finance lease, the leased assets are derecognized and a receivable is recognized which is equal to the present value of the minimum lease payments, discounted at the interest rate implicit in the lease. Initial direct costs incurred in negotiating and arranging a finance lease are incorporated into the receivable through the discount rate applied to the lease. Finance lease income is recognized over the lease term based on a pattern reflecting a constant periodic rate of return on the net investment in the finance lease. Finance lease income is included in the Consolidated Statement of Income under interest income from loans.

Assets leased to customers under agreements which do not transfer substantially all the risks and rewards of ownership are classified as operating leases. The leased assets are included within property and equipment on the Bank's Consolidated Statement of Financial Position. Rental income is recognized on a straight-line basis over the period of the lease in non-interest income – other in the Consolidated Statement of Income. Initial direct costs incurred in negotiating and arranging an operating lease are added to the carrying amount of the leased asset and recognized as an expense on a straight-line basis over the lease term.

Bank as a lessee

Assets held under finance leases are initially recognized as property and equipment in the Consolidated Statement of Financial Position at an amount equal to the fair value of the leased asset or, if lower, the present value of the minimum lease payments. The corresponding finance lease obligation is included in other liabilities in the Consolidated Statement of Financial Position. The discount rate used in calculating the present value of the minimum lease payments is the interest rate implicit in the lease. Contingent rentals are recognized as expense in the periods in which they are incurred.

Operating lease rentals payable are recognized as an expense on a straight-line basis over the lease term, which commences when the lessee controls the physical use of the asset. Lease incentives are treated as a reduction of rental expense and are also recognized over the lease term on a straight-line basis. Contingent rentals arising under operating leases are recognized as an expense in the period in which they are incurred.

Sale and lease-back

Where the Bank enters into a sale leaseback transaction for a non-financial asset at fair market value that results in the Bank retaining an operating lease (where the buyer/lessor retains substantially all risks and rewards of ownership), any gains and losses are recognized immediately in net income. Where the sale leaseback transaction results in a finance lease, any gain on sale is deferred and recognized in net income over the remaining term of the lease.

Leasehold improvements
Leasehold improvements are investments made to customize buildings and offices occupied under operating lease contracts to make them suitable for their intended purpose. The present value of estimated reinstatement costs to bring a leased property into its original condition at the end of the lease, if required, is capitalized as part of the total leasehold improvements costs. At the same time, a corresponding liability is recognized to reflect the obligation incurred. Reinstatement costs are recognized in net income through depreciation of the capitalized leasehold improvements over their estimated useful life.

Provisions
A provision, including for restructuring, is recognized if, as a result of a past event, the Bank has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation.

The amount recognized as a provision is the Bank's best estimate of the consideration required to settle the present obligation, taking into account the risks and uncertainties surrounding the obligation. If the effect of the time value of money is considered material, provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and, where appropriate, the risks specific to the liability. The increase in the provision due to the passage of time is recorded as interest expense – other in the Consolidated Statement of Income.

Insurance contracts
Gross premiums for life insurance contracts are recognized as income when due. Gross premiums for non-life insurance business, primarily property and casualty, are recognized as income over the term of the insurance contracts. Unearned premiums represent the portion of premiums written in the current year that relate to the period of risk after the reporting date. Insurance claims recoveries are accounted as income in the same period as the related claims.

Gross insurance claims for life insurance contracts reflect the cost of all claims arising during the year. Gross insurance claims for property and casualty insurance contracts include paid claims and movements in outstanding claim liabilities. Insurance premiums ceded to reinsurers are accounted as an expense in the same period as the premiums for the direct insurance contracts to which they relate.

Guarantees
A guarantee is a contract that contingently requires the Bank to make specified payments to reimburse the holder for a loss it incurs because a specified debtor failed to make payment when due in accordance with the original or modified terms of a debt instrument. Guarantees include standby letters of credit, letters of guarantee, indemnifications, credit enhancements and other similar contracts. Guarantees that qualify as a derivative are accounted for in accordance with the policy for derivative instruments. For guarantees that do not qualify as a derivative, a liability is recorded for the fair value of the obligation assumed at inception. The fair value of the obligation at inception is generally based on the discounted cash flow of the premium to be received for the guarantee, resulting in a corresponding asset. Subsequent to initial recognition, such guarantees are measured at the higher of the initial amount, less amortization to recognize any fee income earned over the period, and the best estimate of the amount required to settle any financial obligation arising as a result of the guarantee. Any increase in the liability is reported in the Consolidated Statement of Income.

Employee benefits
The Bank provides pension and other benefit plans for eligible employees in Canada and internationally. Pension benefits are offered in the form of defined benefit pension plans (generally based on an employee's length of service and average earnings at retirement), and in the form of defined contribution pension plans (where the Bank's contribution is fixed and there is no legal or constructive obligation to pay further amounts). Other benefits provided include post-retirement health care, dental care and life insurance, along with other long-term employee benefits such as long-term disability benefits.

Defined benefit pension plans and other post-retirement benefit plans
The cost of these employee benefits is actuarially determined each year using the projected unit credit method. The calculation uses management's best estimate of a number of assumptions – including the discount rate, future compensation, health care costs, mortality, as well as the retirement age of employees. The most significant assumption is the discount rate used to determine the defined benefit obligation, which is set by reference to the yields on high quality corporate bonds that have durations that match the terms of the Bank's obligations. Separate discount rates are used to determine the annual benefit expense in Canada and the US. These rates are determined with reference to the yields on high quality corporate bonds with durations that match the various components of the annual benefit expense. The discount rate used to determine the annual benefit expense for all other plans is the same as the rate used to determine the defined benefit obligation at the beginning of the period.

The Bank's net asset or liability in respect of employee benefit plans is calculated separately for each plan as the difference between the present value of future benefits earned in respect of service for prior periods and the fair value of plan assets. The net asset or liability is included in other assets and other liabilities, as appropriate, in the Consolidated Statement of Financial Position. When the net amount in the Consolidated Statement of Financial Position is an asset, the recognized asset is limited to the present value of any economic benefits available in the form of refunds from the plan or reductions in future contributions to the plan.

The current service cost, net interest expense (income), past service cost, and administrative expense are recognized in net income. Net interest expense (income) is calculated by applying the discount rate at the beginning of the annual period to the net defined benefit asset or liability. When the benefits of a plan are improved (reduced), a past service cost (credit) is recognized immediately in net income.

Remeasurements comprising of actuarial gains and losses, the effect of the asset ceiling and the return on plan assets in excess of the interest income on the fair value of assets are recognized immediately in the Consolidated Statement of Financial Position with a charge or credit to the Statement of Comprehensive Income (OCI) in the period in which they occur. Amounts recorded in OCI are not recycled to the Consolidated Statement of Income.

Other long-term employee benefits
Other long-term employee benefits are accounted for similarly to defined benefit pension plans and other post-retirement benefit plans described above, except that remeasurements are recognized in the Consolidated Statement of Income in the period in which they arise.

Defined contribution plans
The cost of such plans are equal to contributions payable by the Bank to employees' accounts for service rendered during the period and expensed.

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Short-term employee benefits
Short-term employee benefits are expensed as the related service is provided and a liability is measured on an undiscounted basis net of payments made.

Recognition of income and expenses
Revenue is recognized to the extent that it is probable that the economic benefits will flow to the Bank and the revenue can be reliably measured. The following specific criteria must also be met before revenue is recognized:

Interest and similar income and expenses
For all non-trading interest-bearing financial instruments, interest income or expense is recorded in net interest income using the effective interest rate. This is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument or a shorter period, where appropriate, to the net carrying amount of the financial asset or financial liability. The calculation takes into account all the contractual terms of the financial instrument (for example, prepayment options) and includes any fees or incremental costs that are directly attributable to the instrument and are an integral part of the effective interest rate, but not future credit losses.

For trading financial instruments, mark-to-market changes including related interest income or expense are recorded in non-interest income – trading revenues.

The carrying amount of interest-bearing financial instruments, measured at amortized cost or classified as FVOCI, is adjusted if the Bank revises its estimates of payments or receipts. The adjusted carrying amount is calculated based on the original effective interest rate and the change in carrying amount is recorded as non-interest income in the Consolidated Statement of Income.

Once the carrying value of a financial asset or a group of similar financial assets has been reduced due to an impairment loss, interest income continues to be recognized based on net effective interest rate inherent in the investment.

Loan origination costs are deferred and amortized into interest income using the effective interest method over the expected term of the loan. Loan fees are recognized in interest income over the appropriate lending or commitment period. Mortgage prepayment fees are recognized in interest income when received, unless they relate to a minor modification to the terms of the mortgage, in which case the fees are deferred and amortized using the effective interest method over the remaining period of the original mortgage.

Loan syndication fees are recognized when no other services are required of the Bank and the fees are non-refundable unless the yield we retain is less than that of comparable lenders in the syndicate. In such cases, an appropriate portion will be deferred and amortized in interest income over the term of the loan.

Loan commitment fees for loans that are likely to be drawn down and other credit related fees are deferred (together with any incremental costs) and recognized as part of the effective interest on the loan. When it is unlikely that a loan will be drawn down, the loan commitment fees are recognized over the commitment period on a straight-line basis.

Fee and commission revenues
The Bank earns fee and commission revenues from a diverse range of services it provides to its customers. Fee income can be divided into the following two categories:

Fees earned for the provision of services over a period of time are accrued over that period the services are provided. These fees include commission income, investment management, custody and other management and advisory fees. Investment management fees and custodial fees are mainly calculated as a percentage of daily or period-end market value of the assets under management (AUM) or assets under administration (AUA) and are received monthly, quarterly, semi-annually, or annually based on the underlying investment management contracts. Performance-based fees related to AUM are earned based on exceeding certain benchmarks or other performance targets, and are recognized at the end of the performance period in which the target is met.

Fees arising from negotiating or participating in the negotiation of a transaction for a third-party, such as the arrangement of the acquisition of shares or other securities or the purchase or sale of businesses, are recognized on completion of the underlying transaction. Fees or components of fees that are linked to a certain performance are recognized after fulfilling the corresponding criteria.

Fee and commission expenses
Fee and commission expenses relate to transaction and service fees which are expensed as the services are received.

Dividend income
Dividend income on equity securities is recognized in Interest income when the Bank's right to receive payment is established.

Share-based payments
Share-based payments awarded to employees are recognized as compensation expense in the Consolidated Statement of Income over the vesting period based on the number of awards expected to vest including the impact of expected forfeitures. For awards that are delivered in tranches, each tranche is considered a separate award and accounted for separately.

Stock appreciation rights and other awards that must be settled for cash are classified as liabilities. Liability-classified awards are re-measured to fair value at each reporting date while they remain outstanding, with any changes in fair value recognized in compensation expense in the period. The liability is expensed over the vesting period which incorporates the re-measurement of the fair value and a revised forfeiture rate that anticipates units expected to vest.

Employee stock options with tandem stock appreciation rights give the employee the right to exercise for shares or settle in cash. These options are classified as liabilities and are re-measured to fair value at each reporting date while they remain outstanding. If an option is exercised, thereby cancelling the tandem stock appreciation right, both the exercise price proceeds together with the accrued liability and associated taxes are credited to equity – common shares in the Consolidated Statement of Financial Position.

Plain vanilla options and other awards that must be settled for shares are classified as equity awards. Equity-classified awards are expensed based on the grant date fair value with a corresponding increase to equity – other reserves in the Consolidated Statement of Financial Position. If an option is exercised, both the exercise price proceeds together with the amount recorded in other reserves is credited to equity – common shares in the Consolidated Statement of Financial Position.

For tandem stock appreciation rights, stock appreciation rights and plain vanilla options, the Bank estimates fair value using an option pricing model. The option pricing model requires inputs such as the exercise price of the option, the current share price, the risk free interest rate, expected dividends, expected volatility (calculated using an equal weighting of implied and historical volatility) and specific employee exercise behaviour patterns based on statistical data. For other awards, fair value is the quoted market price of the Bank's common shares at the reporting date.

Where derivatives are used to economically hedge share-based payment expense, related mark-to-market gains and losses are included in non-interest expenses – salaries and employee benefits in the Consolidated Statement of Income.

A voluntary renouncement of a tandem stock appreciation right where an employee retains the corresponding option for shares with no change in the overall fair value of the award, results in a reclassification of the accrued liability and associated tax to equity – other reserves in the Consolidated Statement of Financial Position. This reclassification is measured at the fair value of the renounced awards as of the renouncement date. Subsequent to the voluntary renouncement, these awards are accounted for as plain vanilla options, based on the fair value as of the renouncement date.

Customer loyalty programs
The Bank operates loyalty points programs, which allow customers to accumulate points when they use the Bank's products and services. The points can then be redeemed for free or discounted products or services, subject to certain conditions.

Consideration received is allocated between the products sold or services rendered and points issued, with the consideration allocated to points equal to their fair value. The fair value of points is generally based on equivalent retail prices for the mix of awards expected to be redeemed. The fair value of the points issued is deferred in other liabilities and recognized as banking revenues when the points are redeemed or lapsed. Management judgment is involved in determining the redemption rate to be used in the estimate of points to be redeemed.

Dividends on shares
Dividends on common and preferred shares and other equity instruments are recognized as a liability and deducted from equity when they are declared and no longer at the discretion of the Bank.

Segment reporting
Management's internal view is the basis for the determination of operating segments. The operating segments are those whose operating results are regularly reviewed by the Bank's chief operating decision-maker to make decisions about resources to be allocated to the segment and assess its performance. The Bank has three operating segments: Canadian Banking, International Banking, and Global Banking and Markets. The other category represents smaller operating segments, including Group Treasury and other corporate items, which are not allocated to an operating segment. These segments offer different products and services and are managed separately based on the Bank's management and internal reporting structure.

The results of these business segments are based upon the internal financial reporting systems of the Bank. The accounting policies used in these segments are generally consistent with those followed in the preparation of the consolidated financial statements by the Bank. The only notable accounting measurement difference is the grossing up of revenues which are tax-exempt and income from associate corporations to an equivalentbefore-tax basis for those affected segments. This change in measurement enables comparison of income arising from taxable and tax-exempt sources.

Because of the complexity of the Bank, various estimates and allocation methodologies are used in the preparation of the business segment financial information. The funding value of assets and liabilities is transfer-priced at wholesale market rates, and corporate expenses are allocated to each segment on an equitable basis using various parameters. As well, capital is apportioned to the business segments on a risk-based methodology. Transactions between segments are recorded within segment results as if conducted with a third-party and are eliminated on consolidation.

Earnings per share (EPS)
Basic EPS is computed by dividing net income for the period attributable to the Bank's common shareholders by the weighted-average number of common shares outstanding during the period.

Diluted EPS is calculated by dividing adjusted net income for the period attributable to common shareholders by the weighted-average number of diluted common shares outstanding for the period. In the calculation of diluted earnings per share, earnings are adjusted for changes in income or expenses that would result from the issuance of dilutive shares. The weighted-average number of diluted common shares outstanding for the period reflects the potential dilution that would occur if options, securities or other contracts that entitle their holders to obtain common shares had been outstanding from the beginning of the period (or a later date) to the end of the period (or an earlier date). Instruments determined to have an antidilutive impact for the period are excluded from the calculation of diluted EPS.

Earnings are adjusted by the after-tax amount of distributions related to dilutive capital instruments recognized in the period. For tandem stock appreciation rights that are carried as liabilities, the after-tax re-measurement included in salaries and employee benefits expense, net of related hedges, is adjusted to reflect the expense had these rights been equity-classified.

The number of additional shares for inclusion in diluted EPS for share-based payment options is determined using the treasury share method. Under this method, the net number of incremental common shares is determined by assuming that in-the-money stock options are exercised and the proceeds are used to purchase common shares at the average market price during the period.

The number of additional shares associated with capital instruments that potentially result in the issuance of common shares is based on the terms of the contract. On occurrence of contingencies as specified in the Non-Viability Contingent Capital (NVCC) Instruments, the number of additional common shares associated with the NVCC subordinated debentures, NVCC subordinated additional Tier 1 capital securities and NVCC preferred shares is based on an automatic conversion formula as set out in the respective prospectus supplements.

4 Transition to IFRS 9

(a) Reconciliation of IAS 39 to IFRS 9

The following table provides the impact from the transition to IFRS 9 on the Consolidated Statement of Financial Position at transition date, November 1, 2017. The impact consists of reclassification and remeasurement.

Reclassification:
These adjustments reflect the movement of balances between categories on the Consolidated Statement of Financial Position with no impact to shareholders' equity. There is no change to the carrying value of the balances as a result of the reclassification.

Remeasurement:
These adjustments, which include expected credit loss, result in a change to the carrying value of the item on the Statement of Financial Position with an impact to shareholders' equity net of tax.

As at November 1, 2017 ($ millions)	Note	IAS 39 Measurement basis	IAS 39 Carrying amount	Reclassification	Remeasurement	IFRS 9 Carrying amount	IFRS 9 Measurement basis	IFRS 9
Assets								
Cash and deposits with financial institutions		Amortized cost	$ 59,663	$ –	$ (3)	$ 59,660	Amortized cost	Cash and deposits with financial institutions*
Precious metals		FVTPL	5,717	–	–	5,717	FVTPL	Precious metals
Trading Assets								Trading assets
Debt securities	*1*	FVTPL	39,333	76	–	39,409	FVTPL	Debt securities
Equity securities		FVTPL	39,319	–	–	39,319	FVTPL	Equity securities
Loans	*3*	FVTPL	17,312	660	1	17,973	FVTPL	Loans
Other		FVTPL	2,500	–	–	2,500	FVTPL	Other
			98,464	736	1	99,201		
Financial assets designated at FVTPL								Financial assets designated at FVTPL
Debt securities		FVTPL (Designated)	13	–	–	13	FVTPL (Designated)	Debt securities
Securities purchased under resale agreements and securities borrowed		Amortized cost	95,319	–	–	95,319	Amortized cost	Securities purchased under resale agreements and securities borrowed*
Derivative financial instruments	*3*	FVTPL	35,364	(2)	–	35,362	FVTPL	Derivative financial instruments
Investment securities								Investment securities
Debt securities	*1,5,8*	Amortized cost	18,765	4,205	118	23,088	Amortized cost	Debt securities*
Debt securities	*1*	FVOCI	49,193	(4,281)	–	44,912	FVOCI	Debt securities
Equity securities	*2*	FVOCI	1,311	(301)	–	1,010	FVOCI	Equity securities
Equity securities	*2*	FVOCI	–	301	–	301	FVTPL	Equity securities
			69,269	(76)	118	69,311		
Loans								Loans
Residential mortgages	*3,4*	Loans & receivables	236,916	(33)	(134)	236,749	Amortized cost	Residential mortgages
Personal loans	*4*	Loans & receivables	89,227	–	2	89,229	Amortized cost	Personal loans
Credit cards	*4*	Loans & receivables	14,104	–	–	14,104	Amortized cost	Credit cards
Business and government	*3*	Loans & receivables	168,449	(623)	–	167,826	Amortized cost	Business and government
			508,696	(656)	(132)	507,908		
Allowance for credit loss	*5*	Loans & receivables	(4,327)	–	(593)	(4,920)	Amortized cost	Allowance for credit loss
Other								Other
Customers' liability under acceptances	*5*	Amortized cost	13,560	–	(16)	13,544	Amortized cost	Customer's liability under acceptances*
Property and equipment			2,381	–	–	2,381		Property and equipment
Investment in associates	*5*		4,586	–	(184)	4,402		Investment in associates
Goodwill and other intangible assets			12,106	–	–	12,106		Goodwill and other intangible assets
Deferred tax assets	*1,6*		1,713	–	50	1,763		Deferred tax assets
Other assets	*5*		12,749	–	(2)	12,747		Other assets
			47,095	–	(152)	46,943		
Total assets			$ 915,273	$ 2	$ (761)	$ 914,514		

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As at November 1, 2017 ($ millions)	Note	IAS 39 Measurement basis	IAS 39 Carrying amount	Reclassification	Remeasurement	IFRS 9 Carrying amount	IFRS 9 Measurement basis	IFRS 9
Liabilities								
Deposits		Amortized cost	$ 625,367	$ –	$ –	$ 625,367	Amortized cost	Deposits
Financial instruments designated at fair value through profit or loss		FVTPL	4,663	–	–	4,663	FVTPL	Financial instruments designated at fair value through profit or loss
Other								Other
Acceptances		Amortized cost	13,560	–	–	13,560	Amortized cost	Acceptances
Obligations related to securities sold short		Amortized cost	30,766	–	–	30,766	Amortized cost	Obligations related to securities sold short
Derivative financial instruments	3	FVTPL	34,200	(2)	–	34,198	FVTPL	Derivative financial instruments
Obligations related to securities sold under repurchase agreements and securities lent		Amortized cost	95,843	–	–	95,843	Amortized cost	Obligations related to securities sold under repurchase agreements and securities lent
Subordinated debentures		Amortized cost	5,935	–	–	5,935	Amortized cost	Subordinated debentures
Other liabilities	7		43,314	4	(151)	43,167		Other liabilities
Total liabilities			853,648	2	(151)	853,499		
Equity								
Common equity								Common equity
Common shares			15,644	–	–	15,644		Common shares
Retained earnings	1,2		38,117	49	(613)	37,553		Retained earnings
Accumulated other comprehensive income	1,2		1,577	(49)	100	1,628		Accumulated other comprehensive income
Other reserves			116	–	–	116		Other reserves
Total common equity			55,454	–	(513)	54,941		Total common equity
Preferred shares			4,579	–	–	4,579		Preferred shares
Total equity attributable to equity holders to the Bank			60,033	–	(513)	59,520		Total equity attributable to equity holders to the Bank
Non-controlling interests in subsidiaries			1,592	–	(97)	1,495		Non-controlling interests in subsidiaries
			61,625	–	(610)	61,015		
Total liabilities and equity			$ 915,273	$ 2	$ (761)	$ 914,514		

* Net of applicable allowance for credit losses.

(1) AFS Debt instruments of $4,281 measured at fair value through other comprehensive income (FVOCI) were reclassified to amortized cost in the amount of $4,205 and $76 to fair value through profit or loss (FVTPL). The reclassifications were due to the business model being "held-to-collect" and the cash flows that did not represent payments that are solely payments of principal and interest (SPPI). The reclassification of debt instruments to amortized cost resulted in remeasurement of $118 with an offset to other comprehensive income (AOCI) and deferred tax assets. The reclassification of AOCI to retained earnings related to FVTPL classification.

(2) AFS Equity instruments of $301 previously fair valued through OCI are now classified as FVTPL, which resulted in reclassification of AOCI to retained earnings.

(3) Certain precious metal loans of $627 and the related derivatives that failed the SPPI test were classified to FVTPL, and $33 of residential mortgages were reclassified to trading to reflect the business model.

(4) Adjustments to certain balances against allowance for credit losses.

(5) Expected credit loss on financial assets and the Bank's share of associated corporations.

(6) The increase in deferred tax assets relates to the impact of the IFRS 9 related adjustments to retained earnings.

(7) The decrease in remeasurement of $151 is comprised of a reduction in deferred tax liabilities of $129, a net decrease of $22 which includes allowance for credit losses related to undrawn commitments, letters of credit and letters of guarantee.

(8) Debt securities managed under a business model of held-to-collect were reclassifed from available-for-sale to amortized cost. As of October 31, 2018, the fair value of these securities was $3,951. For the year ended October 31, 2018, $67 of losses would have been recognized in other comprehensive income if the securities had not been reclassified.

(b) Reconciliation of impairment allowance balance from IAS 39 to IFRS 9

The following table reconciles the closing impairment allowance for financial assets in accordance with IAS 39 and provisions for loan commitments and financial guarantee contracts in accordance with IAS 37 *Provisions, Contingent Liabilities and Contingent Assets* as at October 31, 2017 to the opening impairment allowance under IFRS 9 as at November 1, 2017.

($ millions)	Impairment allowance under IAS 39 as at October 31, 2017	Remeasurement	Impairment allowance under IFRS 9 as at November 1, 2017
Loans and acceptances[1]	$ 4,327	$ 611	$ 4,938
Investment securities (Debt) at amortized cost	–	1	1
Investment securities (Debt) at FVOCI[2]	–	13	13
Deposits with financial institutions	–	3	3
Off-balance sheet credit risks[3]	120	(36)	84
Total	$ 4,447	$ 592	$ 5,039

(1) The remeasurement impact of $611 is comprised of loans $593, acceptances $16 and accrued interest of $2.
(2) The allowance for credit losses of $13 is recorded in accumulated other comprehensive income. These debt securities remain at fair value on the balance sheet.
(3) Off-balance sheet credit risks include credit risks such as undrawn lending commitments, letters of credit and letters of guarantee.

5 Future Accounting Developments

The Bank actively monitors developments and changes in accounting standards from the IASB, as well as requirements from the other regulatory bodies, including OSFI. The Bank is currently assessing the measurement impact of the adoption of new standards issued by the IASB will have on its consolidated financial statements and also evaluating the alternative elections available on transition.

Effective November 1, 2018

Revenue from contracts with customers

The IASB issued IFRS 15 *Revenue from Contracts with Customers* (IFRS 15), which replaces the previous revenue standard IAS 18 *Revenue*, and the related Interpretations on revenue recognition.

The standard is a control-based model as compared to the existing revenue standard which is primarily focused on risks and rewards and provides a single principle based framework to be applied to all contracts with customers that are in scope of the standard. Under the new standard, revenue is recognized when a customer obtains control of a good or service. Transfer of control occurs when the customer has the ability to direct the use of and obtain the benefits of the good or service. The standard introduces a new five step model governing revenue recognition to be applied to contracts with customers. The Bank must also determine whether its performance obligation is to provide the service itself (i.e. the Bank acts as a principal) or to arrange another party to provide the service (i.e. the Bank acts as an agent).

The Bank has assessed the scope of the new guidance to be limited to fees and commission revenues from wealth management and banking services in Canadian and International Banking and underwriting and advisory fees in Global Banking and Markets.

The Bank will adopt the standard and its amendments as of November 1, 2018 using the modified retrospective approach. Under this approach, the Bank will recognize the cumulative effect of initially applying the standard as an adjustment to the opening balance of retained earnings as of November 1, 2018, without restating comparative periods. As of November 1, 2018, the opening balance of retained earnings is expected to decrease by approximately $60 million (net of tax). The decrease in retained earnings relates to certain costs no longer eligible for deferral under the new standard and the re-measurement of certain liabilities at fulfilment cost.

The presentation of certain costs will also change prospectively from non-interest expenses to non-interest income where amounts are deemed to be part of consideration payable to customers or the Bank is deemed to be acting as an agent. This presentation change will not have a material impact on the Bank's consolidated financial statements.

Effective November 1, 2019

Financial instruments: Prepayment features with negative compensation

On October 12, 2017, the IASB issued an amendment to IFRS 9 *Financial Instruments*. The amendment allows certain pre-payable financial assets with so-called negative compensation prepayment option to be measured at amortized cost or fair value through other comprehensive income, if the prepayment amount substantially represents unpaid principal and interest and reasonable compensation. Reasonable compensation may be positive or negative. Prior to this amendment financial assets with this negative compensation feature would have failed the solely payments of principal and interest test and be mandatorily measured at fair value through profit or loss. The amendment will be effective for annual periods beginning on or after January 1, 2019, with early adoption permitted. Based on preliminary assessments, the amendment is not expected to impact the Bank.

Leases

On January 13, 2016, the IASB issued IFRS 16 *Leases*, which requires a lessee to recognize an asset for the right to use the leased item and a liability for the present value of its future lease payments. IFRS 16 will result in leases being recorded on the Bank's balance sheet, including those currently classified as operating leases except for short-term leases and leases with low value of the underlying asset. IFRS 16 substantially carries forward the lessor accounting requirements in IAS 17.

IFRS 16 is effective for the Bank on November 1, 2019. On transition, there are practical expedients available whereby the Bank will not need to reassess whether a contract is, or contains a lease, or reassess the accounting of sale leaseback transactions recognized prior to the date of initial application. A lessee will apply IFRS 16 to its leases either retrospectively to each prior reporting period presented; or retrospectively with the cumulative effect of initially applying IFRS 16 being recognized at the date of initial application.

The Bank is currently in the process of assessing existing contractual relationships to identify the existing population of leases that would be recorded on the balance sheet under the new standard. The Bank continues to evaluate the potential impact to the existing IT systems and processes and next steps include performing an initial quantification of the existing obligations and reviewing the additional disclosures required by the new standard. During 2019, the Bank will also complete its assessment of various practical expedients and formulate its accounting policies under IFRS 16.

IFRIC 23 Uncertainty over income tax treatments

On June 7, 2017, the IASB issued IFRIC 23 that is effective for the Bank beginning November 1, 2019. The interpretation clarifies the accounting for uncertainties over income taxes. The interpretation clarifies application of recognition and measurement requirements in IAS 12 income taxes when there is uncertainty over income tax treatments. The Bank is currently assessing the impact of the interpretation.

Employee Benefits

On February 7, 2018, the IASB issued narrow-scope amendments to pension accounting that is effective for the Bank beginning November 1, 2019. The amendments relate to when a plan amendment, curtailment or settlement has occurred. In such instances, the Bank is required to use updated assumptions to determine current service cost and net interest for the remainder of the reporting period after the change to the plan. For the Bank, the narrow scope amendments are to be applied prospectively to plan amendments, curtailments and settlements occurring after November 1, 2019.

Effective November 1, 2020

Conceptual Framework

On March 29, 2018, the IASB issued the revised Conceptual Framework for Financial Reporting (Framework) that is effective for the Bank beginning November 1, 2020. The Framework itself is not a standard, and does not override existing standards. It is used by the IASB in developing accounting standards. The Bank is currently assessing the impact of the revisions.

Definition of business

On October 22, 2018, the IASB issued a narrow-scope amendment to IFRS 3 Business Combination. The amendments will help companies determine whether an acquisition is of a business or a group of assets. Distinguishing between a business and a group of assets is important because an acquirer recognizes goodwill only when acquiring a business. The amendments apply to transactions for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after January 1, 2020. Earlier adoption is permitted. The Bank is currently assessing the impact.

Definition of material

On October 31, 2018, the IASB issued amendments to IAS 1 Presentation of Financial Statements and IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors, clarifying the definition of material. Under the new definition, information is material if omitting, misstating or obscuring it could reasonably be expected to influence the decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity. The explanations accompanying the definition have also been improved. The amendments are effective prospectively for annual periods beginning on or after January 1, 2020. Earlier adoption is permitted. The Bank is currently assessing the impact.

Effective November 1, 2021

Insurance Contracts

On May 18, 2017, the IASB issued IFRS 17 Insurance Contracts, which provides a comprehensive principle-based framework for the measurement and presentation of all insurance contracts. The new standard will replace IFRS 4 Insurance Contracts and requires insurance contracts to be measured using current fulfillment cash flows and for revenue to be recognized as the service is provided over the coverage period. On November 14, 2018, the IASB tentatively decided to defer the effective date, by one year, to annual periods on or after January 1, 2022. The Bank will continue to track the IASB Board's meeting agenda items on issues and discussions related to the standard, further updates will be provided in Q1 2019.

The IFRS 17 project structure and governance has been established along with a Project Management Office to assist the Executive Steering and Project Operations Committees. The committees comprise of representatives from Global Finance, Global Insurance Actuarial Services, Information Technology and the Insurance Business Operations. The Bank is currently in the Evaluation and Design Solution phase of the project, with Implementation planned for Fiscal 2019 through 2022.

6 Cash and Deposits with Financial Institutions

As at October 31 ($ millions)	2018	2017
Cash and non-interest-bearing deposits with financial institutions	**$ 8,997**	$ 7,825
Interest-bearing deposits with financial institutions	**53,272**	51,838
Total	**$ 62,269**(1)	$ 59,663

(1) Net of impairment allowances of $3.

The Bank is required to maintain balances with central banks, other regulatory authorities and certain counterparties and these amounted to $8,886 million (2017 – $7,282 million).

7 Fair Value of Financial Instruments

Determination of fair value

The calculation of fair value is based on market conditions at a specific point in time and therefore may not be reflective of future fair values. The Bank has controls and processes in place to ensure that the valuation of financial instruments is appropriately determined.

The best evidence of fair value for a financial instrument is the quoted price in an active market. Unadjusted quoted market prices for identical instruments represent a Level 1 valuation. Where possible, valuations are based on quoted prices or observable inputs obtained from active markets. Independent Price Verification (IPV) is undertaken to assess the reliability and accuracy of prices and inputs used in the determination of fair value. The IPV process is performed by price verification groups that are independent from the business. The Bank maintains a list of pricing sources that are used in the IPV process. These sources include, but are not limited to, brokers, dealers and consensus pricing services. The valuation policies relating to the IPV process require that all pricing or rate sources used be external to the Bank. On a periodic basis, an independent assessment of pricing or rate sources is performed to determine market presence or market representative levels.

Quoted prices are not always available for over-the-counter transactions, as well as transactions in inactive or illiquid markets. In these instances, internal models that maximize the use of observable inputs are used to estimate fair value. The chosen valuation technique incorporates all the factors that market participants would take into account in pricing a transaction. When all significant inputs to models are observable, the valuation is classified as Level 2. Financial instruments traded in a less active market are valued using indicative market prices, present value of cash-flows or other valuation techniques. Fair value estimates normally do not consider forced or liquidation sales.

Where financial instruments trade in inactive markets or when using models where observable parameters do not exist, greater management judgment is required for valuation purposes. Valuations that require the significant use of unobservable inputs are considered Level 3.

The specific inputs and valuation techniques used in determining the fair value of financial instruments are noted below. For Level 3 instruments, additional information is disclosed in the Level 3 sensitivity analysis on page 175.

The fair values of cash and deposits with banks, securities purchased under resale agreements and securities borrowed, customers' liability under acceptances, obligations related to securities sold under repurchase agreements and securities lent, acceptances, and obligations related to securities sold short are assumed to approximate their carrying values, either due to their short-term nature or because they are frequently repriced to current market rates.

Trading loans

Trading loans as they relate to precious metals (primarily gold and silver) are valued using a discounted cash flow model incorporating market-observable inputs, including precious metals spot and forward prices and interest rate curves (Level 2). Other trading loans that serve as hedges to loan-based credit total return swaps are valued using consensus prices from Bank approved independent pricing services (Level 2).

Government issued or guaranteed securities

The fair values of government issued or guaranteed debt securities are primarily based on unadjusted quoted prices in active markets, where available (Level 1). Where quoted prices are not available, the fair value is determined by utilizing recent transaction prices, broker quotes, or pricing services (Level 2).

For securities that are not actively traded, the Bank uses a discounted cash flow method, using the effective yield of a similar instrument adjusted for instrument-specific risk factors such as credit spread and contracted features (Level 2).

Corporate and other debt

Corporate and other debt securities are valued using unadjusted quoted prices from independent market data providers or third-party broker quotes (Level 1). Where prices are not available consistently, the last available data is used and verified with a yield-based valuation approach (Level 2). In some instances, interpolated yields of similar bonds are used to price securities (Level 2). The Bank uses pricing models with observable inputs from market sources such as credit spread, interest rate curves, and recovery rates (Level 2). These inputs are verified through an IPV process on a monthly basis.

For certain securities where there is no active market, no consensus market pricing and no indicative or executable independent third-party quotes, the Bank uses pricing by third-party providers or internal pricing models and cannot readily observe the market inputs used to price such instruments (Level 3).

Mortgage-backed securities

The fair value of residential mortgage-backed securities is primarily determined using third-party broker quotes and independent market data providers, where the market is more active (Level 2). Where the market is inactive, an internal price-based model is used (Level 3).

Equity securities

The fair value of equity securities is based on unadjusted quoted prices in active markets, where available (Level 1). Where equity securities are less frequently traded, the most recent exchange-quoted pricing is used to determine fair value. Where there is a wide bid-offer spread, fair value is determined based on quoted market prices for similar securities (Level 2).

Where quoted prices in active markets are not readily available, such as for private equity securities, the fair value is determined as a multiple of the underlying earnings or percentage of underlying assets obtained from third-party general partner statements (Level 3).

Income funds

The fair value of income funds is based on observable unadjusted quoted prices where available (Level 1). Where quoted or active market prices are unavailable, the last available Net Asset Value, fund statements and other financial information available from third-party fund managers at the fund level are used in arriving at the fair value.

Derivatives

Fair values of exchange-traded derivatives are based on unadjusted quoted market prices (Level 1). Fair values of over-the-counter (OTC) derivatives or inactive exchange-traded derivatives are determined using pricing models, which take into account input factors such as current market and contractual prices of the underlying instruments, as well as time value and yield curve or volatility factors underlying the positions (Level 2). The

determination of the fair value of derivatives includes consideration of credit risk, estimated funding costs and ongoing direct costs over the life of the instruments.

Derivative products valued using a valuation technique with market-observable inputs mainly include interest rate swaps and options, currency swaps and forward foreign exchange contracts. The most frequently applied valuation techniques include forward pricing and swap models, using present value calculations. The models incorporate various inputs including foreign exchange spot and forward rates and interest rate curves (Level 2).

Derivative products valued using a valuation technique with significant unobservable inputs are long dated contracts (interest rate swaps, currency swaps, forward foreign exchange contracts, option contracts and certain credit default swaps) and other derivative products that reference a basket of assets, commodities or currencies. These models incorporate certain significant non-observable inputs such as volatility and correlation (Level 3).

Loans

The estimated fair value of loans carried at amortized cost reflects changes in the general level of interest rates and credit worthiness of borrowers that have occurred since the loans were originated or purchased. The particular valuation methods used are as follows:

- Canadian fixed rate residential mortgages are fair valued by discounting the expected future contractual cash flows, taking into account expected prepayments and using management's best estimate of average market interest rates currently offered for mortgages with similar remaining terms (Level 3).
- For fixed rate business and government loans, fair value is determined by discounting the expected future contractual cash flows of these loans at interest rates estimated by using the appropriate currency swap curves for the remaining term, adjusted for a credit mark of the expected losses in the portfolio (Level 3).
- For all other fixed rate loans, fair value is determined by discounting the expected future contractual cash flows of these loans at interest rates estimated by using the appropriate currency swap curves for the remaining term (Level 3).
- For all floating rate loans fair value is assumed to equal book value.

The fair value of loans is not adjusted for the value of any credit protection the Bank has purchased to mitigate credit risk.

Deposits

The fair values of deposits payable on demand or after notice or floating rate deposits payable on a fixed date is assumed to equal book value. The estimated fair values of Canadian personal fixed rate deposits payable on a fixed date are fair valued by discounting the expected future contractual cash outflows, using management's best estimate of average market interest rates currently offered for deposits with similar remaining terms (Level 2).

Deposits under the Canada Mortgage Bond (CMB) program are fair valued by discounting expected future contractual cash flows using market observable inputs (Level 2).

For all other fixed rate deposits, fair value is determined by discounting the expected future contractual cash flows of these deposits at interest rates estimated by using the appropriate currency swap curves for the remaining term (Level 2).

For structured notes containing embedded features that are bifurcated from the Plain Vanilla notes, the fair value of the embedded derivatives is determined using option pricing models with inputs similar to other interest rate or equity derivative contracts (Level 2). The fair value of certain embedded derivatives is determined using net asset values (Level 3).

Subordinated debentures and other liabilities

The fair values of subordinated debentures, including debentures issued by subsidiaries which are included in other liabilities, are determined by reference to quoted market prices where available or market prices for debt with similar terms and risks (Level 2). The fair values of other liabilities is determined by the discounted contractual cash flow method with appropriate currency swap curves for the remaining term (Level 2).

CONSOLIDATED FINANCIAL STATEMENTS

Fair value of financial instruments

The following table sets out the fair values of financial instruments of the Bank using the valuation methods and assumptions described above. The fair values disclosed do not include non-financial assets, such as property and equipment, investments in associates, precious metals, goodwill and other intangible assets.

	2018		2017	
As at October 31 ($ millions)	Total fair value	Total carrying value	Total fair value	Total carrying value
Assets:				
Cash and deposits with financial institutions	**$ 62,269**	**$ 62,269**	$ 59,663	$ 59,663
Trading assets	**100,262**	**100,262**	98,464	98,464
Financial instruments designated at fair value through profit or loss	**12**	**12**	13	13
Securities purchased under resale agreements and securities borrowed	**104,018**	**104,018**	95,319	95,319
Derivative financial instruments	**37,558**	**37,558**	35,364	35,364
Investment securities – other	**57,653**	**57,653**	50,504	50,504
Investment securities – amortized cost	**20,316**	**20,743**	18,716	18,765
Loans	**553,758**	**551,834**	507,276	504,369
Customers' liability under acceptances	**16,329**	**16,329**	13,560	13,560
Other financial assets	**10,913**	**10,913**	9,314	9,314
Liabilities:				
Deposits	**674,535**	**676,534**	625,964	625,367
Financial instruments designated at fair value through profit or loss	**8,188**	**8,188**	4,663	4,663
Acceptances	**16,338**	**16,338**	13,560	13,560
Obligations related to securities sold short	**32,087**	**32,087**	30,766	30,766
Derivative financial instruments	**37,967**	**37,967**	34,200	34,200
Obligations related to securities sold under repurchase agreements and securities lent	**101,257**	**101,257**	95,843	95,843
Subordinated debentures	**5,627**	**5,698**	6,105	5,935
Other financial liabilities	**35,432**	**34,805**	27,531	27,118

Changes in interest rates, credit spreads and liquidity costs are the main cause of changes in the fair value of the Bank's financial instruments resulting in a favourable or unfavourable variance compared to carrying value. For the Bank's financial instruments carried at cost or amortized cost, the carrying value is not adjusted to reflect increases or decreases in fair value due to market fluctuations, including those due to interest rate changes. For FVOCI investment securities, derivatives and financial instruments measured at FVTPL or designated as fair value through profit or loss, the carrying value is adjusted regularly to reflect the fair value.

CONSOLIDATED FINANCIAL STATEMENTS

Fair value hierarchy

The following table outlines the fair value hierarchy of instruments carried at fair value on a recurring basis and of instruments not carried at fair value.

	2018(1)				2017			
As at October 31 ($ millions)	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Instruments carried at fair value on a recurring basis:								
Assets:								
Precious metals(2)	**$ –**	**$ 3,175**	**$ 16**	**$ 3,191**	$ –	$ 5,717	$ –	$ 5,717
Trading assets								
Loans	**–**	**14,334**	**–**	**14,334**	–	17,312	–	17,312
Canadian federal government and government guaranteed debt	**13,003**	**–**	**–**	**13,003**	10,343	–	–	10,343
Canadian provincial and municipal debt	**–**	**10,159**	**–**	**10,159**	–	7,325	–	7,325
US treasury and other US agencies' debt	**7,164**	**–**	**–**	**7,164**	6,894	–	–	6,894
Other foreign governments' debt	**4,610**	**1,833**	**–**	**6,443**	5,680	1,149	–	6,829
Corporate and other debt	**3**	**8,984**	**18(3)**	**9,005**	44	7,920	22	7,986
Income funds	**29**	**–**	**–**	**29**	180	165	–	345
Equity securities	**39,513**	**158**	**–**	**39,671**	38,760	170	–	38,930
Other(4)	**454**	**–**	**–**	**454**	2,500	–	–	2,500
	$ 64,776	**$ 38,643**	**$ 34**	**$ 103,453**	$ 64,401	$ 39,758	$ 22	$ 104,181
Financial assets designated at fair value through profit or loss	**$ 12**	**$ –**	**$ –**	**$ 12**	$ 13	$ –	$ –	$ 13
Investment securities(5)								
Canadian federal government and government guaranteed debt	**6,373**	**2,518**	**–**	**8,891**	9,677	2,416	–	12,093
Canadian provincial and municipal debt	**366**	**3,986**	**–**	**4,352**	593	4,230	–	4,823
US treasury and other US agencies' debt	**18,472**	**669**	**–**	**19,141**	6,305	367	–	6,672
Other foreign governments' debt	**10,457**	**9,485**	**48(6)**	**19,990**	10,944	8,746	113	19,803
Corporate and other debt	**732**	**1,818**	**13(3)**	**2,563**	750	3,584	53	4,387
Mortgage-backed securities	**–(7)**	**906**	**–**	**906**	539	876	–	1,415
Equity securities	**838**	**263**	**709**	**1,810**	590	177	544	1,311
	$ 37,238	**$ 19,645**	**$ 770**	**$ 57,653**	$ 29,398	$ 20,396	$ 710	$ 50,504
Derivative financial instruments								
Interest rate contracts	**$ –**	**$ 8,927**	**$ 112**	**$ 9,039**	$ –	$ 9,742	$ 36	$ 9,778
Foreign exchange and gold contracts	**5**	**22,197**	**–**	**22,202**	4	21,496	–	21,500
Equity contracts	**797**	**1,556**	**8**	**2,361**	615	1,720	–	2,335
Credit contracts	**–**	**349**	**–**	**349**	–	175	–	175
Commodity contracts	**92**	**3,515**	**–**	**3,607**	133	1,443	–	1,576
	$ 894	**$ 36,544**	**$ 120**	**$ 37,558**	$ 752	$ 34,576	$ 36	$ 35,364
Liabilities:								
Deposits(8)	**$ –**	**$ (401)**	**$ –**	**$ (401)**	$ –	$ (7)	$ –	$ (7)
Financial liabilities designated at fair value through profit or loss	**–**	**8,188**	**–**	**8,188**	–	4,663	–	4,663
Obligations related to securities sold short	**24,563**	**7,524**	**–**	**32,087**	27,796	2,970	–	30,766
Derivative financial instruments								
Interest rate contracts	**–**	**11,012**	**74**	**11,086**	–	10,823	267	11,090
Foreign exchange and gold contracts	**–**	**20,537**	**–**	**20,537**	3	17,646	–	17,649
Equity contracts	**1,057**	**1,884**	**5**	**2,946**	502	2,724	7	3,233
Credit contracts	**–**	**70**	**–**	**70**	–	179	–	179
Commodity contracts	**34**	**3,294**	**–**	**3,328**	268	1,781	–	2,049
	$ 1,091	**$ 36,797**	**$ 79**	**$ 37,967**	$ 773	$ 33,153	$ 274	$ 34,200
Instruments not carried at fair value(9):								
Assets:								
Investment securities – amortized cost	**$ 7,392(7)**	**$ 12,815**	**$ 109(6)**	**$ 20,316**	$ 4,240	$ 14,476	$ –	$ 18,716
Loans(10)	**–**	**313,490**	**–**	**313,490**	–	–	286,621	286,621
Liabilities:								
Deposits(10)(11)	**–**	**293,898**	**–**	**293,898**	–	266,995	–	266,995
Subordinated debentures	**–**	**5,627**	**–**	**5,627**	–	6,105	–	6,105
Other liabilities	**–**	**20,383**	**–**	**20,383**	–	13,363	–	13,363

(1) The amounts for October 31, 2018 have been prepared in accordance with IFRS 9, prior periods have not been restated (refer to Notes 3 and 4).
(2) The fair value of precious metals is determined based on quoted market prices and forward spot prices, where applicable.
(3) IFRS 9 adoption resulted in reclassification of $17 million of corporate and other debt to trading assets in Level 3 from available-for-sale debt securities (refer to Note 4).
(4) Represents energy related assets for the year ended October 31, 2018 (October 31, 2017 – represents base metal positions).
(5) Excludes debt investment securities measured at amortized cost of $20,743 (held-to-maturity as at October 31, 2017 – $18,765).
(6) IFRS 9 adoption resulted in reclassification of $104 million of other foreign governments' debt in Level 3 to debt securities measured at amortized cost (refer to Note 4).
(7) IFRS 9 adoption resulted in reclassification of $539 million of mortgage backed securities in Level 1 to debt securities measured at amortized cost (refer to Note 4).
(8) These amounts represent embedded derivatives bifurcated from structured notes.
(9) Represents the fair value of financial assets and liabilities where the carrying amount is not a reasonable approximation of fair value.
(10) Excludes floating rate instruments as carrying value approximates fair value.
(11) Excludes embedded derivatives bifurcated from structured notes.

Level 3 instrument fair value changes

Financial instruments categorized as Level 3 as at October 31, 2018, in the fair value hierarchy comprise certain precious metals, illiquid government bonds, highly-structured corporate bonds, illiquid investments in private equity securities, and complex derivatives.

The following table summarizes the changes in Level 3 instruments carried at fair value for the year ended October 31, 2018.

All positive balances represent assets and negative balances represent liabilities. Consequently, positive amounts indicate purchases of assets or settlements of liabilities and negative amounts indicate sales of assets or issuances of liabilities.

	As at October 31, 2018(1)							
($ millions)	Fair value November 1 2017	Gains/(losses) recorded in income	Gains/(losses) recorded in OCI	Purchases/ Issuances	Sales/ Settlements	Transfers into/out of Level 3	Fair value October 31 2018	Change in unrealized gains/(losses) recorded in income for instruments still held(2)
Precious metals	$ –	$ –	$ –	$ 5	$ (8)	$ 19	$ 16	$ –
	–	–	–	5	(8)	19	16	–
Trading assets								
Loans	–	–	–	–	(2)	2	–	–
Corporate and other debt	39	(10)	–	–	(16)	5	18	–
	39	(10)	–	–	(18)	7	18	–
Investment securities								
Other foreign governments' debt	9	–	–	61	(22)	–	48	n/a
Corporate and other debt	36	–	(5)	–	(18)	–	13	n/a
Equity securities	544	16	18	218(3)	(67)	(20)	709	14
	589	16	13	279	(107)	(20)	770	14
Derivative financial instruments – assets								
Interest rate contracts	36	67	–	31	(22)	–	112	58
Equity contracts	–	(2)	–	4	–	6	8	(2)(4)
Derivative financial instruments – liabilities								
Interest rate contracts	(267)	(108)	–	(24)	22	303	(74)	(26)(5)
Foreign exchange and gold contracts	–	–	–	(6)	–	6	–	–
Equity contracts	(7)	–	–	(5)	–	7	(5)	–
	(238)	(43)	–	–	–	322	41	30
Total	$ 390	$ (37)	$ 13	$ 284	$ (133)	$ 328	$ 845	$ 44

(1) The amounts for November 1, 2017 and October 31, 2018 have been prepared in accordance with IFRS 9, prior period amounts have not been restated (refer to Notes 3 and 4).
(2) These amounts represent the gains and losses from fair value changes of Level 3 instruments still held at the end of the period that are recorded in the Consolidated Statement of Income.
(3) Includes amount related to BBVA Chile acquisition of $45 million.
(4) Certain unrealized gains and losses on derivative assets and liabilities are largely offset by mark-to-market changes on other instruments included in trading revenues in the Consolidated Statement of Income, since these instruments act as an economic hedge to certain derivative assets and liabilities.
(5) Certain unrealized losses on interest rate derivative contracts are largely offset by mark-to-market changes on embedded derivatives on certain deposit liabilities in the Consolidated Statement of Income.

The following table summarizes the changes in Level 3 instruments carried at fair value for the year ended October 31, 2017.

	As at October 31, 2017						
($ millions)	Fair value November 1 2016	Gains/(losses) recorded in income(1)	Gains/(losses) recorded in OCI	Purchases/ Issuances	Sales/ Settlements	Transfers into/out of Level 3	Fair value October 31 2017
Trading assets	$ 1,222	$ (20)	$ –	$ –	$ (1,180)	$ –	$ 22
Investment securities(2)	909	(24)	38	122	(332)	(3)	710
Derivative financial instruments	(236)	10	–	(6)	3	(9)	(238)
Deposits(3)	(1,163)	6	–	–	1,157	–	–

(1) Gains or losses for items in Level 3 may be offset with losses or gains on related hedges in Level 1 or Level 2.
(2) Investment securities include financial assets designated as available-for-sale.
(3) These amounts represent embedded derivatives bifurcated from certain deposit liabilities.

Significant transfers

Significant transfers can occur between the fair value hierarchy levels when additional or new information regarding valuation inputs and their refinement and observability become available. The Bank recognizes transfers between levels of the fair value hierarchy as of the end of the reporting period during which the change has occurred.

Derivative liabilities of $316 million were transferred out of Level 3 into Level 2 for the year ended October 31, 2018. All transfers were as a result of new information being obtained regarding the observability of inputs used in the valuation.

The following significant transfers were made among Levels 2 and 3 for the year ended October 31, 2017:

A net amount of derivative assets of $135 million and derivative liabilities of $126 million were transferred out of Level 3 into Level 2 for equity derivatives. Transfers were primarily as a result of assessment and consideration of volatility as an insignificant input for certain equity derivative contracts.

Level 3 sensitivity analysis

The table below sets out information about significant unobservable inputs used in measuring financial instruments categorized as Level 3 in the fair value hierarchy.

	Valuation technique	Significant unobservable inputs	Range of estimates for unobservable inputs(1)	Changes in fair value from reasonably possible alternatives ($ millions)
Derivative financial instruments				
Interest rate contracts	Option pricing model	Interest rate volatility	7% - 93%	–
Equity contracts	Option pricing model	Equity volatility Single stock correlation	2% - 124% (70)% - 97%	(9)/9

(1) The range of estimates represents the actual lowest and highest level inputs used to fair value financial instruments within each financial statement category.

The Bank applies judgment in determining unobservable inputs used to calculate the fair value of Level 3 instruments.

The following section discusses the significant unobservable inputs for Level 3 instruments.

Correlation

Correlation in a credit derivative or debt instrument refers to the likelihood of a single default causing a succession of defaults. It affects the distribution of the defaults throughout the portfolio and therefore affects the valuation of instruments such as collateralized debt obligation tranches. A higher correlation may increase or decrease fair value depending on the seniority of the instrument.

Correlation becomes an input into equity derivative pricing when the relationship between price movements of two or more of the underlying assets is relevant.

Volatility

Volatility is a measure of security price fluctuation. Historic volatility is often calculated as the annualized standard deviation of daily price variation for a given time period. Implied volatility is volatility, when input into an option pricing model, that returns a value equal to the current market value of the option.

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8 Trading Assets

(a) Trading securities

An analysis of the carrying value of trading securities is as follows:

As at October 31, 2018 ($ millions)	Remaining term to maturity						
	Within three months	Three to twelve months	One to five years	Five to ten years	Over ten years	No specific maturity	Carrying value
Trading securities:							
Canadian federal government issued or guaranteed debt	**$ 1,500**	**$ 4,040**	**$ 4,781**	**$ 863**	**$ 1,819**	**$ –**	**$ 13,003**
Canadian provincial and municipal debt	**859**	**876**	**2,122**	**3,425**	**2,877**	**–**	**10,159**
U.S. treasury and other U.S. agency debt	**514**	**1,574**	**3,348**	**1,602**	**126**	**–**	**7,164**
Other foreign government debt	**1,353**	**1,042**	**2,452**	**1,155**	**441**	**–**	**6,443**
Common shares	**–**	**–**	**–**	**–**	**–**	**39,700**	**39,700**
Other	**595**	**1,650**	**4,888**	**1,203**	**585**	**84**	**9,005**
Total	**$ 4,821**	**$ 9,182**	**$ 17,591**	**$ 8,248**	**$ 5,848**	**$ 39,784**	**$ 85,474**
Total by currency (in Canadian equivalent):							
Canadian dollar	**$ 2,711**	**$ 5,222**	**$ 5,901**	**$ 4,798**	**$ 4,972**	**$ 9,730**	**$ 33,334**
U.S. dollar	**620**	**2,414**	**7,105**	**2,377**	**523**	**16,695**	**29,734**
Mexican peso	**322**	**119**	**538**	**21**	**4**	**405**	**1,409**
Other currencies	**1,168**	**1,427**	**4,047**	**1,052**	**349**	**12,954**	**20,997**
Total trading securities	**$ 4,821**	**$ 9,182**	**$ 17,591**	**$ 8,248**	**$ 5,848**	**$ 39,784**	**$ 85,474**

As at October 31, 2017 ($ millions)	Remaining term to maturity						
	Within three months	Three to twelve months	One to five years	Five to ten years	Over ten years	No specific maturity	Carrying value
Trading securities:							
Canadian federal government issued or guaranteed debt	$ 950	$ 1,696	$ 4,283	$ 1,333	$ 2,081	$ –	$ 10,343
Canadian provincial and municipal debt	1,230	1,127	1,536	1,269	2,163	–	7,325
U.S. treasury and other U.S. agency debt	113	980	3,301	2,214	286	–	6,894
Other foreign government debt	1,172	819	2,716	1,132	990	–	6,829
Common shares	–	–	–	–	–	39,275	39,275
Other	530	1,134	4,702	1,088	532	–	7,986
Total	$ 3,995	$ 5,756	$ 16,538	$ 7,036	$ 6,052	$ 39,275	$ 78,652
Total by currency (in Canadian equivalent):							
Canadian dollar	$ 2,368	$ 3,064	$ 5,130	$ 3,068	$ 4,524	$ 8,619	$ 26,773
U.S. dollar	372	1,771	6,807	2,777	526	12,016	24,269
Mexican peso	249	235	488	1	1	997	1,971
Other currencies	1,006	686	4,113	1,190	1,001	17,643	25,639
Total trading securities	$ 3,995	$ 5,756	$ 16,538	$ 7,036	$ 6,052	$ 39,275	$ 78,652

(b) Trading loans

The following table provides the geographic breakdown of trading loans:

As at October 31 ($ millions)	2018	2017
Trading loans[1][2]		
U.S.[3]	**$ 9,080**	$ 10,654
Europe[4]	**3,066**	3,824
Asia Pacific[4]	**1,077**	1,605
Canada[4]	**280**	376
Other[4]	**831**	853
Total	**$ 14,334**	$ 17,312

(1) Geographic segmentation of trading loans is based upon the location of the ultimate risk of the underlying asset.
(2) Loans are denominated in U.S. dollars.
(3) Includes trading loans that serve as a hedge to loan-based credit total return swaps of $6,071 (2017 – $7,390), while the remaining relates to short-term precious metals trading and lending activities.
(4) These loans are primarily related to short-term precious metals trading and lending activities.

9 Financial Instruments Designated at Fair Value Through Profit or Loss

In accordance with its risk management strategy, the Bank has elected to designate certain investments, loans and senior note liabilities at fair value through profit or loss to reduce an accounting mismatch between fair value changes in these instruments and fair value changes in related derivatives, and where a hybrid financial liability contains one or more embedded derivatives that are not closely related to the host contract. Changes in fair value of financial liabilities arising from the Bank's own credit risk are recognized in other comprehensive income, without subsequent reclassification to net income.

The cumulative fair value adjustment due to own credit risk is determined at a point in time by comparing the present value of expected future cash flows over the term of these liabilities discounted at the Bank's effective funding rate, and the present value of expected future cash flows discounted under a benchmark rate. The change in fair value attributable to change in credit risk is determined by the change in the cumulative fair value adjustment due to own credit risk.

The following table presents the fair value of financial assets and liabilities designated at fair value through profit or loss and their changes in fair value.

	Fair value		Change in fair value		Cumulative change in FV(1)	
	As at		For the year ended			
October 31 ($ millions)	**2018**	2017	**2018**	2017	**2018**	2017
Assets						
Investment securities(2)	**$ 12**	$ 13	**$ –**	$ –	**$ –**	$ 11
Loans(3)	**–**	–	**–**	(205)	**–**	(197)
Liabilities						
Senior note liabilities(4)	**8,188**	4,663	**869**	103	**778**	(91)

(1) The cumulative change in fair value is measured from the instruments' date of initial recognition.
(2) Changes in fair value are recorded in non-interest income – other.
(3) Changes in fair value are recorded in non-interest income – trading revenues.
(4) Changes in fair value attributable to changes in the Bank's own credit risk are recorded in other comprehensive income. Other changes in fair value are recorded in non-interest income – trading revenues.

The following tables present the changes in fair value attributable to changes in the Bank's own credit risk for financial liabilities designated at fair value through profit or loss as well as their contractual maturity and carrying amounts.

	Senior Note Liabilities				
	Contractual maturity amount(1)	Carrying Value	Difference between carrying value and contractual maturity amount	Changes in fair value for the period attributable to changes in own credit risk recorded in other comprehensive income	Cumulative changes in fair value attributable to changes in own credit risk(1)
As at October 31, 2018	**$ 8,966**	**$ 8,188**	**$ 778**	**$ (30)**	**$(66)**
As at October 31, 2017	$ 4,572	$ 4,663	$ (91)	$ (28)	$(36)

(1) The cumulative change in fair value is measured from the instruments' date of initial recognition.

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10 Derivative Financial Instruments

(a) Notional amounts(1)

The following table provides the aggregate notional amounts of derivative financial instruments outstanding by type and segregated between those used by the Bank in its dealer capacity (Trading) and those derivatives designated in hedging relationships. The notional amounts of these contracts represent the derivatives volume outstanding and do not represent the potential gain or loss associated with the market risk or credit risk of such instruments. Credit derivatives within other derivative contracts are comprised primarily of purchased and sold credit default swap transactions. To a lesser extent, this category also includes total return swaps referenced to loans and debt securities. Other derivative contracts – other includes precious metals other than gold, and other commodities including energy and base metal derivatives.

	2018			2017		
As at October 31 ($ millions)	Trading	Hedging	Total	Trading	Hedging	Total
Interest rate contracts						
Exchange-traded:						
Futures	**$ 127,595**	**$ –**	**$ 127,595**	$ 161,590	$ –	$ 161,590
Options purchased	**3,402**	**–**	**3,402**	5,474	–	5,474
Options written	**–**	**–**	**–**	2,894	–	2,894
	130,997	**–**	**130,997**	169,958	–	169,958
Over-the-counter:						
Forward rate agreements	**11,407**	**–**	**11,407**	208	–	208
Swaps	**403,061**	**30,480**	**433,541**	441,607	18,609	460,216
Options purchased	**29,617**	**–**	**29,617**	34,190	–	34,190
Options written	**34,655**	**–**	**34,655**	38,099	–	38,099
	478,740	**30,480**	**509,220**	514,104	18,609	532,713
Over-the-counter (settled through central counterparties):						
Forward rate agreements	**319,026**	**–**	**319,026**	329,853	–	329,853
Swaps	**3,028,670**	**136,188**	**3,164,858**	2,236,148	106,979	2,343,127
Options purchased	**–**	**–**	**–**	–	–	–
Options written	**–**	**–**	**–**	–	–	–
	3,347,696	**136,188**	**3,483,884**	2,566,001	106,979	2,672,980
Total	**$ 3,957,433**	**$ 166,668**	**$ 4,124,101**	$ 3,250,063	$ 125,588	$ 3,375,651
Foreign exchange and gold contracts						
Exchange-traded:						
Futures	**$ 7,476**	**$ –**	**$ 7,476**	$ 32,452	$ –	$ 32,452
Options purchased	**48**	**–**	**48**	16	–	16
Options written	**36**	**–**	**36**	481	–	481
	7,560	**–**	**7,560**	32,949	–	32,949
Over-the-counter:						
Spot and forwards	**412,229**	**26,433**	**438,662**	427,112	21,623	448,735
Swaps	**340,614**	**57,380**	**397,994**	321,567	63,300	384,867
Options purchased	**42,497**	**–**	**42,497**	39,100	–	39,100
Options written	**41,768**	**–**	**41,768**	39,547	–	39,547
	837,108	**83,813**	**920,921**	827,326	84,923	912,249
Over-the-counter (settled through central counterparties):						
Spot and forwards	**27,886**	**–**	**27,886**	–	–	–
Swaps	**–**	**–**	**–**	–	–	–
Options purchased	**–**	**–**	**–**	–	–	–
Options written	**–**	**–**	**–**	–	–	–
	27,886	**–**	**27,886**	–	–	–
Total	**$ 872,554**	**$ 83,813**	**$ 956,367**	$ 860,275	$ 84,923	$ 945,198
Other derivative contracts						
Exchange-traded:						
Equity	**$ 43,323**	**$ –**	**$ 43,323**	$ 33,287	$ –	$ 33,287
Credit	**–**	**–**	**–**	–	–	–
Commodity and other contracts	**55,076**	**–**	**55,076**	45,938	–	45,938
	98,399	**–**	**98,399**	79,225	–	79,225
Over-the-counter:						
Equity	**79,226**	**756**	**79,982**	64,444	796	65,240
Credit	**18,902**	**–**	**18,902**	26,737	–	26,737
Commodity and other contracts	**45,174**	**–**	**45,174**	34,715	–	34,715
	143,302	**756**	**144,058**	125,896	796	126,692
Over-the-counter (settled through central counterparties):						
Equity	**–**	**–**	**–**	2,863	–	2,863
Credit	**10,964**	**–**	**10,964**	10,855	–	10,855
Commodity and other contracts	**326**	**–**	**326**	6,762	–	6,762
	11,290	**–**	**11,290**	20,480	–	20,480
Total	**$ 252,991**	**$ 756**	**$ 253,747**	$ 225,601	$ 796	$ 226,397
Total notional amounts outstanding	**$ 5,082,978**	**$ 251,237**	**$ 5,334,215**	$ 4,335,939	$ 211,307	$ 4,547,246

(1) The notional amounts represent the amount to which a rate or price is applied to determine the amount of cash flows to be exchanged.

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(b) Remaining term to maturity

The following table summarizes the remaining term to maturity of the notional amounts of the Bank's derivative financial instruments by type:

As at October 31, 2018 ($ millions)	Within one year	One to five years	Over five years	Total
Interest rate contracts				
Futures	**$ 72,068**	**$ 55,519**	**$ 8**	**$ 127,595**
Forward rate agreements	**227,761**	**92,717**	**9,955**	**330,433**
Swaps	**1,316,741**	**1,448,580**	**833,078**	**3,598,399**
Options purchased	**6,644**	**22,985**	**3,390**	**33,019**
Options written	**4,211**	**24,718**	**5,726**	**34,655**
	1,627,425	**1,644,519**	**852,157**	**4,124,101**
Foreign exchange and gold contracts				
Futures	**3,005**	**4,100**	**371**	**7,476**
Spot and forwards	**438,760**	**26,241**	**1,547**	**466,548**
Swaps	**90,987**	**195,484**	**111,523**	**397,994**
Options purchased	**39,505**	**2,851**	**189**	**42,545**
Options written	**39,395**	**2,199**	**210**	**41,804**
	611,652	**230,875**	**113,840**	**956,367**
Other derivative contracts				
Equity	**84,333**	**34,890**	**4,082**	**123,305**
Credit	**13,056**	**13,798**	**3,012**	**29,866**
Commodity and other contracts	**70,292**	**29,958**	**326**	**100,576**
	167,681	**78,646**	**7,420**	**253,747**
Total	**$ 2,406,758**	**$ 1,954,040**	**$ 973,417**	**$ 5,334,215**

As at October 31, 2017 ($ millions)	Within one year	One to five years	Over five years	Total
Interest rate contracts				
Futures	$ 62,152	$ 98,731	$ 707	$ 161,590
Forward rate agreements	282,062	47,999	–	330,061
Swaps	971,003	1,172,422	659,918	2,803,343
Options purchased	10,690	17,036	11,938	39,664
Options written	5,809	23,800	11,384	40,993
	1,331,716	1,359,988	683,947	3,375,651
Foreign exchange and gold contracts				
Futures	4,810	27,474	168	32,452
Spot and forwards	401,461	47,210	64	448,735
Swaps	96,767	185,747	102,353	384,867
Options purchased	36,291	2,825	–	39,116
Options written	37,309	2,719	–	40,028
	576,638	265,975	102,585	945,198
Other derivative contracts				
Equity	73,983	26,514	893	101,390
Credit	18,249	15,272	4,071	37,592
Commodity and other contracts	50,253	37,021	141	87,415
	142,485	78,807	5,105	226,397
Total	$ 2,050,839	$ 1,704,770	$ 791,637	$ 4,547,246

(c) Credit risk

As with other financial assets, derivative instruments are subject to credit risk. Credit risk arises from the possibility that counterparties may default on their obligations to the Bank. However, whereas the credit risk of other financial assets is represented by the principal amount net of any applicable allowance for credit losses, the credit risk associated with derivatives is normally a small fraction of the notional amount of the derivative instrument.

Derivative contracts generally expose the Bank to credit loss if changes in market rates affect a counterparty's position unfavourably and the counterparty defaults on payment. Accordingly, exposure to credit risk of derivatives is represented by the positive fair value of the instrument.

Negotiated over-the-counter derivatives generally present greater credit exposure than exchange-traded contracts. The net change in the exchange-traded contracts is normally settled daily in cash with the exchange. Holders of these contracts look to the exchange for performance under the contract.

The Bank strives to limit credit risk by dealing with counterparties that it believes are creditworthy, and investment grade counterparties account for a significant portion of the credit risk exposure arising from the Bank's derivative transactions as at October 31, 2018. To control credit risk associated with derivatives, the Bank uses the same credit risk management activities and procedures that are used in the lending business in assessing and adjudicating potential credit exposure. The Bank applies limits to each counterparty, measures exposure as the current positive fair value plus potential future exposure, and uses credit mitigation techniques, such as netting and collateralization.

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The Bank obtains the benefit of netting by entering into master netting arrangements with counterparties (typically industry standard International Swaps and Derivatives Association (ISDA) agreements), which allow for a single net settlement of all transactions covered by that agreement in the event of a default or early termination of the transactions. In this manner, the credit risk associated with favourable contracts is eliminated by the master netting arrangement to the extent that unfavourable contracts with the same counterparty are not settled before favourable contracts.

Collateralization is typically documented by way of an ISDA Credit Support Annex (CSA), the terms of which may vary according to each party's view of the other party's creditworthiness. CSAs can require one party to post initial margin at the onset of each transaction. CSAs also allow for variation margin to be called if total uncollateralized mark-to-market exposure exceeds an agreed upon threshold. Such variation margin provisions can be one way (only one party will ever post collateral) or bi-lateral (either party may post collateral depending upon which party is in-the-money). The CSA will also detail the types of collateral that are acceptable to each party, and the adjustments that will be applied against each collateral type. The terms of the ISDA master netting agreements and CSAs are taken into consideration in the calculation of counterparty credit risk exposure (see also page 85 of the 2018 Annual Report).

Derivatives instruments used by the Bank include credit derivatives in its investment and loan portfolios: credit protection is sold as an alternative to acquiring exposure to bond or loan assets, while credit protection is bought to manage or mitigate credit exposures.

The following table summarizes the credit exposure of the Bank's derivative financial instruments. The credit risk amount (CRA) represents the estimated replacement cost, or positive fair value, for all contracts taking into account master netting or collateral arrangements that have been made. The CRA does not reflect actual or expected losses.

The credit equivalent amount (CEA) is the CRA plus an add-on for potential future exposure. The add-on amount is based on a formula prescribed in the Capital Adequacy Requirements (CAR) Guideline of the Superintendent. The risk-weighted balance is calculated by multiplying the CEA by the capital requirement (K) times 12.5, where K is a function of the probability of default (PD), loss given default (LGD), maturity and prescribed correlation factors. Other derivative contracts – other includes precious metals other than gold, and other commodities, including energy and base metal derivatives.

	2018				2017			
As at October 31 ($ millions)	Notional amount	Credit risk amount (CRA)(1)	Credit equivalent amount (CEA)(1)	CET1 Risk Weighted Assets(2)	Notional amount	Credit risk amount (CRA)(1)	Credit equivalent amount (CEA)(1)	CET1 Risk Weighted Assets(2)
Interest rate contracts								
Futures	**$ 127,595**	**$ –**	**$ 93**	**$ –**	$ 161,590	$ –	$ 65	$ –
Forward rate agreements	**330,433**	**36**	**157**	**82**	330,061	20	30	20
Swaps	**3,598,399**	**96**	**4,436**	**1,125**	2,803,343	250	5,459	1,341
Options purchased	**33,019**	**36**	**138**	**63**	39,664	5	105	57
Options written	**34,655**	**–**	**2**	**1**	40,993	–	15	3
	4,124,101	**168**	**4,826**	**1,271**	3,375,651	275	5,674	1,421
Foreign exchange and gold contracts								
Futures	**7,476**	**–**	**85**	**–**	32,452	–	56	–
Spot and forwards	**466,548**	**2,571**	**5,440**	**2,006**	448,735	2,370	6,311	1,765
Swaps	**397,994**	**4,297**	**8,232**	**2,604**	384,867	4,023	7,297	1,898
Options purchased	**42,545**	**712**	**240**	**76**	39,116	523	515	113
Options written	**41,804**	**–**	**20**	**5**	40,028	–	83	12
	956,367	**7,580**	**14,017**	**4,691**	945,198	6,916	14,262	3,788
Other derivative contracts								
Equity	**123,305**	**455**	**4,927**	**1,505**	101,390	45	5,123	1,575
Credit	**29,866**	**239**	**420**	**119**	37,592	12	1,421	174
Commodity and other contracts	**100,576**	**1,182**	**8,052**	**830**	87,415	9	10,953	807
	253,747	**1,876**	**13,399**	**2,454**	226,397	66	17,497	2,556
Credit Valuation Adjustment(2)	**–**	**–**	**–**	**4,616**	–	–	–	2,988
Total derivatives	**$ 5,334,215**	**$ 9,624**	**$32,242**	**$13,032**	$ 4,547,246	$ 7,257	$ 37,433	$ 10,753
Amount settled through central counterparties(3)								
Exchange-traded	**236,956**	**–**	**7,300**	**153**	282,132	–	10,385	208
Over-the-counter	**3,523,060**	**–**	**781**	**16**	2,693,460	–	1,334	27
	$ 3,760,016	**$ –**	**$ 8,081**	**$ 169**	$ 2,975,592	$ –	$ 11,719	$ 235

(1) The amounts presented are net of collateral and master netting agreements at the product level. The total amounts relating to netting and collateral were $27,934 (2017 – $28,107) for CRA, and $63,831 (2017 – $51,623) for CEA.
(2) As per OSFI guideline, effective 2014, Credit Valuation Adjustment (CVA) to CET1 RWA for derivatives was phased-in. In 2018, the CVA was 0.80 (2017 – 0.72).
(3) Amounts are included under total derivatives above. Amounts include exposures settled directly through central counterparties and exposures settled through clearing members of central counterparties.

(d) Fair value

The following table summarizes the fair value of derivatives segregated by type and segregated between trading and those derivatives designated in hedging relationships.

As at October 31 ($ millions)	2018 Average fair value		2018 Year-end fair value		2017 Year-end fair value(1)	
	Favourable	Unfavourable	Favourable	Unfavourable	Favourable	Unfavourable
Trading						
Interest rate contracts						
Forward rate agreements	**$ 83**	**$ 17**	**$ 57**	**$ –**	$ 27	$ 1
Swaps	**8,193**	**10,130**	**8,158**	**8,956**	8,895	10,330
Options	**84**	**107**	**104**	**128**	53	75
	8,360	**10,254**	**8,319**	**9,084**	8,975	10,406
Foreign exchange and gold contracts						
Forwards	**5,213**	**5,232**	**6,611**	**5,800**	5,973	5,223
Swaps	**10,660**	**8,570**	**11,864**	**10,292**	10,945	8,774
Options	**765**	**691**	**826**	**831**	730	681
	16,638	**14,493**	**19,301**	**16,923**	17,648	14,678
Other derivative contracts						
Equity	**2,451**	**3,380**	**2,361**	**2,895**	2,274	3,233
Credit	**299**	**128**	**349**	**70**	175	179
Commodity and other contracts	**2,829**	**2,765**	**3,607**	**3,328**	1,576	2,049
	5,579	**6,273**	**6,317**	**6,293**	4,025	5,461
Trading derivatives' market valuation	**$ 30,577**	**$ 31,020**	**$ 33,937**	**$ 32,300**	$ 30,648	$ 30,545
Hedging						
Interest rate contracts						
Swaps			**$ 720**	**$ 2,002**	$ 803	$ 684
Foreign exchange and gold contracts						
Forwards			**331**	**310**	634	215
Swaps			**2,570**	**3,304**	3,218	2,756
			$ 2,901	**$ 3,614**	$ 3,852	$ 2,971
Other derivative contracts						
Equity			**$ –**	**$ 51**	$ 61	$ –
Hedging derivatives' market valuation			**$ 3,621**	**$ 5,667**	$ 4,716	$ 3,655
Total derivative financial instruments as per Statement of Financial Position			**$ 37,558**	**$ 37,967**	$ 35,364	$ 34,200
Less: impact of master netting and collateral(2)			**27,934**	**27,934**	28,107	28,107
Net derivative financial instruments(2)			**$ 9,624**	**$ 10,033**	$ 7,257	$ 6,093

(1) The average fair value of trading derivatives' market valuation for the year ended October 31, 2017 was: favourable $30,780 and unfavourable $34,032. Average fair value amounts are based on the latest 13 month-end balances.

(2) Master netting agreement amounts are based on the capital adequacy criteria of the Basel Committee on Banking Supervision (BCBS) and OSFI. These criteria allow netting where there are legally enforceable contracts which enable net settlement in the event of a default, bankruptcy, liquidation or similar circumstances.

(e) Hedging activities

The Bank manages interest rate risk, foreign currency risk and equity risk through hedge accounting transactions.

Interest rate risk

Single-currency interest rate swaps are used to hedge interest rate risk exposure. In fair value hedges of interest rate risk, the interest rate exposure from fixed rate assets and liabilities is converted from a fixed to floating exposure. In cash flow hedges of interest rate risk, the interest rate exposure from floating rate assets and liabilities is converted from floating to fixed. The Bank generally hedges interest rate risk only to the extent of benchmark interest rates. The total interest cash flows usually comprise a spread in addition to the benchmark rate.

Foreign currency risk

In fair value hedges, cross-currency interest rate swaps and single-currency interest rate swaps are used to manage foreign currency exposure in conjunction with interest rate exposure. Cross-currency interest rate swaps or a combination of cross-currency and single-currency interest rate swaps are mainly used to convert a foreign currency fixed rate exposure to a functional currency floating rate exposure The Bank generally hedges interest rate risk only to the extent of benchmark interest rates. The total interest cash flows usually comprise a spread in addition to the benchmark rate.

In cash flow hedges, cross-currency interest rate swaps, single-currency interest rate swaps, foreign currency forwards and foreign currency assets or liabilities are used to manage foreign currency exposure, or a combined foreign currency and interest rate exposure. Cross-currency interest rate swaps are used to offset the foreign currency exposure by exchanging the interest cash flows in one currency for interest cash flows in another currency. Single-currency interest rate swaps may be used in conjunction with cross-currency interest rate swaps to convert the foreign currency exposure or resulting functional currency exposure from floating to fixed. Foreign currency forwards and foreign currency denominated assets and liabilities are used to offset the exposure arising from highly probable future cash flows and purchase considerations for business acquisitions denominated in a foreign currency. In hedges of both foreign currency and interest rate exposure, the interest rate risk is generally hedged only to the extent of the
benchmark interest rate. The total interest cash flows usually comprise a spread in addition to the benchmark rate.

In net investment hedges, the Bank designates foreign currency liabilities and foreign currency forwards as hedging instruments to manage foreign currency exposure. The designated non-derivative liabilities are denominated in the functional currency of the net investment, such that the foreign

exchange translation impact from the net investment will be offset by the foreign exchange impact from the designated liabilities. The foreign currency forward contracts are structured to sell the functional currency of the net investment in return for the Bank's functional currency.

Equity risk
Equity risk is created by the Bank's share-based compensation plans awarded to employees. In cash flow hedges, total return swaps are mainly used to offset the equity exposure by exchanging interest payments for payments based on the returns on the underlying shares.

For all of the risks identified above, the economic relationship and hedge ratio are determined using a qualitative and quantitative assessment. This assessment incorporates comparison of critical terms of the hedged and hedging item, and regression analysis. For regression analysis, a hedging relationship is considered highly effective when all of the following criteria are met: correlation between the variables in the regression is at least 0.8 or greater; slope of the regression is within a 0.8-1.25 range; and confidence level of the slope is at least 95%.The main sources of hedge ineffectiveness include the following:

- The use of different discount curves to value the hedged item and the hedging derivative in fair value hedges, in order to reflect the reduced credit risk of collateralized derivatives;
- Differences in the underlying reference interest rate tenor and reset/settlement frequency between the hedging instruments and the hedged item.

The Bank has elected to continue to apply the hedge accounting requirements of IAS 39. However, the Bank has implemented the additional hedge accounting disclosures that are required by the IFRS 9 related amendments to IFRS 7 "Financial Instruments: Disclosures". The following tables present current fiscal year information in accordance with these new disclosure requirements. Prior year comparatives have not been restated and are presented in accordance with the prior IFRS 7 disclosure requirements at the end of this section.

The following table summarizes the notional amounts of derivatives and carrying amounts of cash and deposit liabilities designated as hedging instruments.

	Notional amounts(1)				
	Remaining term to maturity			No specific	
As at October 31, 2018 ($ millions)	Within one year	One to five years	Over five years	maturity	Total
Fair value hedges					
Interest rate risk – swaps	$ 16,006	$ 78,236	$ 11,270	$ –	$ 105,512
Foreign currency/interest rate risk – swaps	–	689	–	–	689
Cash flow hedges					
Interest rate risk – swaps	12,257	21,908	9,713	–	43,878
Foreign currency/interest rate risk – swaps	5,539	19,193	2,489	–	27,221
Foreign currency risk					
Swaps	20,983	63,697	8,465	–	93,145
Foreign currency forwards	8,999	–	–	–	8,999
Cash	–	–	–	92	92
Equity risk – total return swaps	298	458	–	–	756
Net investment hedges					
Foreign currency risk					
Foreign currency forwards	17,434	–	–	–	17,434
Deposit liabilities – carrying amount	–	–	–	6,077	6,077
Total	$ 81,516	$ 184,181	$ 31,937	$ 6,169	$ 303,803

(1) Notional amounts relating to derivatives that are hedging multiple risks in both assets and liabilities are included in more than one category.

The following table shows the average rate or price of significant hedging instruments.

As at October 31, 2018	Average rate or price(1) Fixed interest rate	FX rate	Price
Fair value hedges			
Interest rate risk – swaps	2.04%	n/a	n/a
Foreign currency/interest rate risk – swaps			
CAD-USD	2.22%	1.29	n/a
CAD-EUR	3.02%	1.33	n/a
Cash flow hedges			
Interest rate risk – swaps	2.37%	n/a	n/a
Foreign currency/ interest rate risk – swaps			
CAD-USD	1.75%	1.27	n/a
Foreign currency risk			
Swaps			
CAD-USD	n/a	1.30	n/a
CAD-EUR	n/a	1.48	n/a
CAD-GBP	n/a	1.74	n/a
Foreign currency forwards			
CAD-USD	n/a	1.30	n/a
Equity price risk – total return swaps	n/a	n/a	$ 73.87
Net investment hedges			
Foreign currency risk – foreign currency forwards			
CAD-USD	n/a	1.29	n/a
CAD-MXN	n/a	15.77	n/a
CAD-PEN	n/a	2.59	n/a

(1) The average rate or price is calculated in aggregate for all of the Bank's hedge relationships, including hedges of assets and liabilities. The majority of the Bank's hedges have a remaining term of maturity of less than 5 years.

For fair value hedges, the following table contains information related to items designated as hedging instruments, hedged items and ineffectiveness.

For the year ended October 31, 2018 ($ millions)	Carrying amount of the hedging instruments(1) Assets	Liabilities	Hedge Ineffectiveness(2) Gains/(losses) on hedging instrument used to calculate hedge ineffectiveness	Gains/(losses) on hedged item used to calculate hedge ineffectiveness	Ineffectiveness recorded in non-interest income – other	Carrying amount of the hedged item(3)	Accumulated amount of fair value hedge adjustment gains/ (losses) on the hedged item(4) Active hedges	Discontinued hedges
Fair value hedges								
Interest rate risk – swaps	$ 448	$ (1,454)	$ (475)	$ 469	$ (6)			
Investment securities			360	(367)	(7)	$ 16,286	$ (149)	$ 63
Loans			260	(265)	(5)	23,763	(246)	(149)
Deposit liabilities			(1,037)	1,043	6	(58,026)	1,065	186
Subordinated debentures			(58)	58	–	(3,923)	37	40
Foreign currency/interest rate risk – swaps	7	(31)	–	(1)	(1)			
Investment securities			5	(5)	–	814	6	–
Deposit liabilities			(4)	4	–	(466)	3	–
Subordinated debentures			(1)	–	(1)	–	–	–
Total	$ 455	$ (1,485)	$ (475)	$ 468	$ (7)	$ (21,552)	$ 716	$ 140

(1) Comprises unrealized gains/losses and are recorded within derivative financial instruments in assets and liabilities, respectively in the Consolidated Statement of Financial Position.
(2) Includes ineffectiveness related to hedges discontinued during the year ended October 31, 2018.
(3) This represents the carrying value on the Consolidated Statement of Financial Position and comprises amortized cost before allowance for credit losses, plus fair value hedge adjustment, except for investment securities which are carried at fair value.
(4) This represents the accumulated fair value hedge adjustment and is a component of the carrying amount of the hedged item.

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For cash flow hedges and net investment hedges, the following table contains information related to items designated as hedging instruments, hedged items and ineffectiveness.

For the year ended October 31, 2018 ($ millions)	Carrying amount of the hedging instruments(1)		Hedge Ineffectiveness(2)		
	Assets	Liabilities	Gains/(losses) on hedging instrument used to calculate hedge ineffectiveness	Gains/(losses) on hypothetical derivative used to calculate hedge ineffectiveness(3)	Ineffectiveness recorded in non-interest income – other(4)
Cash flow hedges					
Interest rate risk – swaps	$ 961	$ (1,350)	$ (339)	$ (341)	$ 2
Foreign currency/interest rate risk – swaps	101	(955)	(530)	(549)	(6)
Foreign currency risk					
Swaps	1,773	(1,516)	(563)	(562)	(6)
Foreign currency forwards	143	(14)	332	332	–
Cash	92	–	1	1	–
Equity risk – total return swaps	–	(51)	(92)	(92)	–
	3,070	(3,886)	(1,191)	(1,211)	(10)
Net investment hedges					
Foreign currency risk					
Foreign currency forwards	188	(296)	(160)	(160)	–
Deposit liabilities	–	(6,077)	(121)	(121)	–
	188	(6,373)	(281)	(281)	–
Total	$ 3,258	$ (10,259)	$ (1,472)	$ (1,492)	$ (10)

(1) Comprises unrealized gains/losses for derivative instruments and are recorded within derivative financial instruments in assets and liabilities, respectively in the Consolidated Statement of Financial Position.
(2) Includes ineffectiveness related to hedges discontinued during the year ended October 31, 2018.
(3) For cash flow hedges, hypothetical derivatives having critical terms which match those of the underlying hedged item are used to assess hedge ineffectiveness.
(4) For cash flow hedges, ineffectiveness is only recognized in the Consolidated Statement of Income when the life-to-date cumulative change in the hedging instrument exceeds the cumulative change in the hypothetical derivative.

For cash flow hedges and net investment hedges, the following table contains information regarding the impacts on the Consolidated Statement of Other Comprehensive Income on a pre-tax basis.

For the year ended October 31, 2018 ($ millions)	AOCI as at November 1, 2017	Net gains/ (losses) recognized in OCI	Amount reclassified to net income as the hedged item affects net income(1)	Amount reclassified to net income for hedges of forecasted transactions that are no longer expected to occur(1)	Net gains (losses) included in non-financial asset/liability as a result of a hedged forecasted transaction	AOCI as at October 31, 2018	Balance in cash flow hedge reserve/unrealized foreign currency translation account as at October 31, 2018	
							Active hedges	Discountinued hedges
Cash flow hedges								
Interest rate risk	$ 104	$ (341)	$ 83	$ –	$ –	$ (154)	$ (262)	$ 108
Foreign currency/interest rate risk	(151)	(524)	225	–	–	(450)	(352)	(98)
Foreign currency risk	321	(224)	464	(22)	(94)	445	433	12
Equity risk	46	(92)	39	–	–	(7)	(7)	–
	320	(1,181)	811	(22)	(94)	(166)	(188)	22
Net investment hedges								
Foreign currency risk	(2,970)	(281)	–	–	–	(3,251)	(3,199)	(52)
Total	$ (2,650)	$ (1,462)	$ 811	$ (22)	$ (94)	$ (3,417)	$ (3,387)	$ (30)

(1) Amounts reclassified from the cash flow hedge reserve to net income are recorded in non-interest income-other.

Comparative year information under prior IFRS 7 disclosure requirements

Ineffectiveness of hedge relationships
Due to the ineffective portion of designated hedges, the Bank recorded the following amounts in non-interest income – other:

For the year ended October 31 ($ millions)	2017
Fair value hedges	
Gain (loss) recorded on hedged items	$ 574
Gain (loss) recorded on hedging instruments	(588)
Ineffectiveness	$ (14)
Cash flow hedges	
Ineffectiveness	$ 24

Hedging instruments
Market valuation is disclosed by the type of relationship:

As at October 31 ($ millions)	2017 Favourable	2017 Unfavourable
Derivatives designated in fair value hedging relationships(1)	$ 687	$ 751
Derivatives designated in cash flow hedging relationships	3,746	2,749
Derivatives designated in net investment hedging relationships(1)	283	155
Total derivatives designated in hedging relationships	$ 4,716	$ 3,655

(1) As at October 31, 2017, the fair value of non-derivative instruments designated as net investment hedges and fair value hedges was $6,183 (2016 – $6,905). These non-derivative hedging instruments are presented as deposits – financial institutions on the Consolidated Statement of Financial Position.

Cash flow hedges
The period when cash flows of designated hedged items are expected to occur and impact the Consolidated Statement of Income are as follows:

As at October 31, 2017 ($ millions)	Within one year	Within one to five years	More than five years
Cash inflows from assets	$ 11,235	$ 19,866	$ 4,178
Cash outflows from liabilities	(31,542)	(26,863)	(4,746)
Net cash flows	$ (20,307)	$ (6,997)	$ (568)

Income related to interest cash flows is recognized using the effective interest method over the life of the underlying instrument. Foreign currency gains and losses related to future cash flows of on-balance sheet monetary items are recognized as incurred. Forecasted revenue is recognized over the period to which it relates.

11 Offsetting Financial Assets and Financial Liabilities

The Bank is eligible to present certain financial assets and financial liabilities as listed in the table below on a net basis on the Consolidated Statement of Financial Position pursuant to criteria described in Note 3 – Significant accounting policies.

The following tables provide information on the impact of offsetting on the Bank's Consolidated Statement of Financial Position, as well as the financial impact of netting for instruments that are subject to enforceable master netting arrangements or similar agreements, but do not qualify for offsetting in the Consolidated Statement of Financial Position, as well as available cash and financial instrument collateral.

As at October 31, 2018 ($ millions)

Types of financial assets	Gross amounts of recognized financial assets	Gross amounts of recognized financial liabilities offset in the consolidated statement of financial position	Net amounts of financial assets presented in the consolidated statement of financial position	Related amounts not offset in the consolidated statement of financial position: Impact of master netting arrangements or similar agreements(1)	Related amounts not offset in the consolidated statement of financial position: Collateral(2)	Net amount(3)
Derivative financial instruments	**$ 37,887(4)**	**$ (329)(4)**	**$ 37,558**	**$ (24,568)**	**$ (4,085)**	**$ 8,905**
Securities purchased under resale agreements and securities borrowed	**116,375**	**(12,357)**	**104,018**	**(6,849)**	**(91,347)**	**5,822**
Total	**$ 154,262**	**$ (12,686)**	**$ 141,576**	**$ (31,417)**	**$(95,432)**	**$ 14,727**

As at October 31, 2018 ($ millions)

Types of financial liabilities	Gross amounts of recognized financial liabilities	Gross amounts of recognized financial assets offset in the consolidated statement of financial position	Net amounts of financial liabilities presented in the consolidated statement of financial position	Related amounts not offset in the consolidated statement of financial position: Impact of master netting arrangements or similar agreements(1)	Related amounts not offset in the consolidated statement of financial position: Collateral(2)	Net amount
Derivative financial instruments	**$ 38,296(4)**	**$ (329)(4)**	**$ 37,967**	**$ (24,568)**	**$ (5,051)**	**$ 8,348**
Obligations related to securities sold under repurchase agreements and securities lent	**113,614**	**(12,357)**	**101,257**	**(6,849)**	**(88,154)**	**6,254**
Total	**$ 151,910**	**$ (12,686)**	**$ 139,224**	**$ (31,417)**	**$(93,205)**	**$14,602**

(1) Amounts that are subject to master netting arrangements or similar agreements but were not offset in the Consolidated Statement of Financial Position because they did not meet the net settlement/simultaneous settlement criteria; or because the rights of set off are conditional upon the default of the counterparty only.
(2) Cash and financial instrument collateral amounts received or pledged in relation to the total amounts of financial assets and financial liabilities, including those that were not offset in the Consolidated Statement of Financial Position. These amounts are disclosed at fair value and the rights of set off are conditional upon the default of the counterparty.
(3) Not intended to represent the Bank's actual exposure to credit risk, as a variety of credit mitigation strategies are employed in addition to offsetting and collateral arrangements.
(4) During 2018, the Bank adopted the settlement-to-market (STM) model for derivatives cleared through a clearing organization. Under this model, the legal characterization of variation margin is considered to be settled at the end of each day. As such, the balances in the Gross amounts of recognized financial assets/liabilities and the Gross amounts offset in the consolidated statement of financial position decreased by approximately $18 billion each.

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As at October 31, 2017 ($ millions)

Types of financial assets	Gross amounts of recognized financial assets	Gross amounts of recognized financial liabilities offset in the consolidated statement of financial position	Net amounts of financial assets presented in the consolidated statement of financial position	Related amounts not offset in the consolidated statement of financial position: Impact of master netting arrangements or similar agreements(1)	Related amounts not offset in the consolidated statement of financial position: Collateral(2)	Net amount(3)
Derivative financial instruments(4)	$ 49,512	$ (14,148)	$ 35,364	$ (22,400)	$ (5,915)	$ 7,049
Securities purchased under resale agreements and securities borrowed	106,721	(11,402)	95,319	(11,649)	(75,675)	7,995
Total	$ 156,233	$ (25,550)	$ 130,683	$ (34,049)	$ (81,590)	$ 15,044

As at October 31, 2017 ($ millions)

Types of financial liabilities	Gross amounts of recognized financial liabilities	Gross amounts of recognized financial assets offset in the consolidated statement of financial position	Net amounts of financial liabilities presented in the consolidated statement of financial position	Related amounts not offset in the consolidated statement of financial position: Impact of master netting arrangements or similar agreements(1)	Related amounts not offset in the consolidated statement of financial position: Collateral(2)	Net amount
Derivative financial instruments(4)	$ 48,348	$ (14,148)	$ 34,200	$ (22,400)	$ (4,700)	$ 7,100
Obligations related to securities sold under repurchase agreements and securities lent	107,245	(11,402)	95,843	(11,649)	(72,311)	11,883
Total	$ 155,593	$ (25,550)	$ 130,043	$ (34,049)	$ (77,011)	$ 18,983

(1) Amounts that are subject to master netting arrangements or similar agreements but were not offset in the Consolidated Statement of Financial Position because they did not meet the net settlement/simultaneous settlement criteria; or because the rights of set off are conditional upon the default of the counterparty only.
(2) Cash and financial instrument collateral amounts received or pledged in relation to the total amounts of financial assets and financial liabilities, including those that were not offset in the Consolidated Statement of Financial Position. These amounts are disclosed at fair value and the rights of set off are conditional upon the default of the counterparty.
(3) Not intended to represent the Bank's actual exposure to credit risk, as a variety of credit mitigation strategies are employed in addition to offsetting and collateral arrangements.
(4) For fiscal 2017, the cash collateral received against the positive market values of derivative financial instruments of $793 and the cash collateral pledged towards the negative mark to market of derivative financial instruments of $1,112 are recorded within other liabilities and other assets, respectively.

12 Investment Securities

The following table presents the carrying amounts of the Bank's investment securities per measurement category.

As at October 31, 2018 ($ millions)	2018(1)	2017
Debt investment securities measured at FVOCI	**$ 55,843**	$ n/a
Debt investment securities measured at amortized cost	**20,743**	n/a
Equity investment securities designated as at FVOCI	**1,305**	n/a
Equity investment securities measured at FVTPL	**505**	n/a
Available-for-sale investment securities	**n/a**	50,504
Held-to-maturity investment securities	**n/a**	18,765
Total investment securities	**78,396**	69,269

(1) The amounts for year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Notes 3 and 4).

(a) Debt investment securities measured at fair value through other comprehensive income (FVOCI)

As at October 31, 2018 ($ millions)	Cost	Gross unrealized gains	Gross unrealized losses	Fair value
Canadian federal government issued or guaranteed debt	**$ 8,903**	**$ 38**	**$ 50**	**$ 8,891**
Canadian provincial and municipal debt	**4,403**	**3**	**54**	**4,352**
U.S. treasury and other U.S. agency debt	**19,298**	**6**	**163**	**19,141**
Other foreign government debt	**20,022**	**49**	**81**	**19,990**
Other debt	**3,503**	**6**	**40**	**3,469**
Total debt securities measured at FVOCI	**$ 56,129**	**$ 102**	**$ 388**	**$ 55,843**

(b) Debt investment securities measured at amortized cost

As at October 31, 2018 ($ millions)	Fair Value	Carrying value(1)
Canadian federal and provincial government issued or guaranteed debt	**$ 6,530**	**$ 6,681**
U.S. treasury and other U.S. agency debt	**4,321**	**4,462**
Other foreign government debt	**3,086**	**3,131**
Corporate debt	**6,379**	**6,469**
Total debt investment securities measured at amortized cost	**$ 20,316**	**$ 20,743**

(1) Balances are net of impairment allowances of $(1).

(c) Equity investment securities designated at fair value through other comprehensive income (FVOCI)

The Bank has designated certain instruments shown in the following table as equity securities FVOCI as these investments are expected to be held for the long-term for strategic purposes, effective November 1, 2017. In prior years, these instruments were classified as available-for-sale and measured at fair value with changes to carrying value recognized in other comprehensive income.

As at October 31, 2018 ($ millions)	Cost	Gross unrealized gains	Gross unrealized losses	Fair value
Preferred equity instruments	**$ 334**	**$ –**	**$ 54**	**$ 280**
Common shares	**937**	**126**	**38**	**1,025**
Total equity investment securities designated at FVOCI	**$ 1,271**	**$ 126**	**$ 92**	**$ 1,305**

(d) Available-for-sale investment securities

An analysis of unrealized gains and losses on available-for-sale securities is as follows:

As at October 31, 2017 ($ millions)	Cost	Gross unrealized gains	Gross unrealized losses	Fair value
Canadian federal government issued or guaranteed debt	$ 12,069	$ 119	$ 95	$ 12,093
Canadian provincial and municipal debt	4,839	13	29	4,823
U.S. treasury and other U.S. agency debt	6,761	1	90	6,672
Other foreign government debt	19,788	49	34	19,803
Other debt	5,792	34	24	5,802
Preferred shares	397	1	87	311
Common shares	899	164	63	1,000
Total available-for-sale securities	$ 50,545	$ 381	$ 422	$ 50,504

The net unrealized loss on available-for-sale securities of $41 million increases to a net unrealized loss of $48 million after the impact of qualifying hedges is taken into account. The net unrealized loss on available-for-sale securities is recorded in Accumulated Other Comprehensive Income.

(e) Held-to-maturity investment securities

An analysis of the fair value and carrying value of held-to-maturity securities is presented below:

As at October 31, 2017 ($ millions)	Fair value	Carrying value
Canadian federal and provincial government issued or guaranteed debt	$ 5,748	$ 5,779
U.S. treasury and other U.S. agency debt	3,991	3,993
Other foreign government debt	2,690	2,705
Corporate debt	6,287	6,288
Total held-to-maturity securities	$ 18,716	$ 18,765

(f) An analysis of the carrying value of investment securities is as follows:

	Remaining term to maturity						
As at October 31, 2018 ($ millions)	Within three months	Three to twelve months	One to five years	Five to ten years	Over ten years	No specific maturity	Carrying value
Fair value through other comprehensive income							
Debt instruments							
Canadian federal government issued or guaranteed debt	$ 1,439	$ 407	$ 5,878	$ 105	$ 1,062	$ –	$ 8,891
Yield(1) %	*0.6*	*1.5*	*2.0*	*2.6*	*3.5*	–	*1.9*
Canadian provincial and municipal debt	1,092	1,107	2,084	64	5	–	4,352
Yield(1) %	*1.7*	*1.8*	*1.8*	*3.2*	*2.9*	–	*1.8*
U.S. treasury and other U.S. agency debt	322	3,517	13,485	1,654	163	–	19,141
Yield(1) %	*1.8*	*2.0*	*2.4*	*3.1*	*3.2*	–	*2.4*
Other foreign government debt	6,884	6,379	5,349	1,053	325	–	19,990
Yield(1) %	*1.3*	*1.7*	*3.7*	*3.8*	*4.3*	–	*2.3*
Other debt	718	872	1,553	141	185	–	3,469
Yield(1) %	*1.5*	*1.8*	*2.0*	*2.6*	*2.6*	–	*1.9*
	10,455	12,282	28,349	3,017	1,740	–	55,843
Equity instruments							
Preferred equity instruments	–	–	–	–	–	280	280
Common shares	–	–	–	–	–	1,025	1,025
						1,305	1,305
Total FVOCI	10,455	12,282	28,349	3,017	1,740	1,305	57,148
Amortized cost							
Canadian federal and provincial government issued or guaranteed debt	692	868	5,121	–	–	–	6,681
U.S. treasury and other U.S. agency debt	197	988	3,266	–	11	–	4,462
Other foreign government debt	354	1,193	966	502	116	–	3,131
Corporate debt	637	1,113	4,414	246	59	–	6,469
	1,880	4,162	13,767	748	186	–	20,743
Fair value through profit or loss							
Equity instruments	–	–	–	–	–	505	505
Total investment securities	$ 12,335	$ 16,444	$ 42,116	$ 3,765	$ 1,926	$ 1,810	$ 78,396
Total by currency (in Canadian equivalent):							
Canadian dollar	$ 2,918	$ 1,828	$ 11,478	$ 357	$ 1,102	$ 967	$ 18,650
U.S. dollar	1,797	8,384	26,137	2,053	354	366	39,091
Mexican peso	640	541	892	282	–	15	2,370
Other currencies	6,980	5,691	3,609	1,073	470	462	18,285
Total investment securities	$ 12,335	$ 16,444	$ 42,116	$ 3,765	$ 1,926	$ 1,810	$ 78,396

(1) Represents the weighted-average yield of fixed income securities.

As at October 31, 2017 ($ millions)	Remaining term to maturity: Within three months	Three to twelve months	One to five years	Five to ten years	Over ten years	No specific maturity	Carrying value
Available-for-sale							
Canadian federal government issued or guaranteed debt	$ 8	$ 291	$ 9,780	$ 905	$ 1,109	$ –	$ 12,093
Yield(1) %	*0.9*	*1.1*	*1.1*	*2.7*	*3.2*	–	*1.4*
Canadian provincial and municipal debt	99	737	3,698	284	5	–	4,823
Yield(1) %	*0.6*	*1.5*	*1.7*	*2.4*	*2.9*	–	*1.7*
U.S. treasury and other U.S. agency debt	106	1,260	2,374	2,704	228	–	6,672
Yield(1) %	*1.0*	*1.5*	*1.0*	*1.6*	*1.5*	–	*1.3*
Other foreign government debt	7,810	5,283	5,313	1,259	138	–	19,803
Yield(1) %	*0.6*	*2.8*	*4.1*	*5.7*	*6.2*	–	*2.5*
Other debt	1,082	1,541	2,784	210	185	–	5,802
Yield(1) %	*0.6*	*0.8*	*1.6*	*2.5*	*2.5*	–	*1.2*
Preferred shares	–	–	–	–	–	311	311
Common shares	–	–	–	–	–	1,000	1,000
Total available-for-sale securities	9,105	9,112	23,949	5,362	1,665	1,311	50,504
Held-to-maturity							
Canadian federal and provincial government issued or guaranteed debt	65	860	4,854	–	–	–	5,779
U.S. treasury and other U.S. agency debt	1,290	–	2,703	–	–	–	3,993
Other foreign government debt	–	683	1,914	102	6	–	2,705
Corporate debt	167	821	5,300	–	–	–	6,288
Total held-to-maturity assets	1,522	2,364	14,771	102	6	–	18,765
Total investment securities	$ 10,627	$ 11,476	$ 38,720	$ 5,464	$ 1,671	$ 1,311	$ 69,269
Total by currency (in Canadian equivalent):							
Canadian dollar	$ 76	$ 1,165	$ 15,500	$ 1,276	$ 1,130	$ 539	$ 19,686
U.S. dollar	1,961	4,178	19,344	3,023	419	372	29,297
Mexican peso	420	579	1,568	285	–	9	2,861
Other currencies	8,170	5,554	2,308	880	122	391	17,425
Total investment securities	$ 10,627	$ 11,476	$ 38,720	$ 5,464	$ 1,671	$ 1,311	$ 69,269

(1) Represents the weighted-average yield of fixed income securities.

(g) Net gain on sale of investment securities

The following table presents the net gain on sale of investment securities:

For the year ended October 31 ($ millions)	2018(1)	2017	2016
Net realized gains	**$ n/a**	$ 399	$ 570
Debt investment securities measured at fair value through other comprehensive income (FVOCI)	**146**	n/a	n/a
Total net realized gains on investment securities	**146**	399	570
Impairment losses	**–**	19(2)	36(2)
Net gain on sale of investment securities	**$ 146**	$ 380	$ 534

(1) The amounts for year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Notes 3 and 4).
(2) Impairment losses are comprised of (2017 – $14; 2016 – $36) from equity securities and (2017 –$5; 2016 – nil) from other debt securities.

13 Loans, Impaired Loans and Allowance for Credit Losses

(a) Loans at amortized cost

As at October 31 ($ millions)	IFRS 9 2018(1) Gross loans	IFRS 9 2018(1) Allowance for credit losses	IFRS 9 2018(1) Net carrying amount	IAS 39 2017 Gross loans	IAS 39 2017 Allowance for credit losses	IAS 39 2017 Net carrying amount
Residential mortgages	**$ 253,357**	**$ 678**	**$ 252,679**	$ 236,916	$ 551	$ 236,365
Personal loans	**96,019**	**2,109**	**93,910**	89,227	1,502	87,725
Credit cards	**16,485**	**1,213**	**15,272**	14,104	802	13,302
Business and government	**191,038**	**1,065**	**189,973**	168,449	1,472	166,977
Total	**$ 556,899**	**$ 5,065**	**$ 551,834**	$ 508,696	$ 4,327	$ 504,369

(1) The amounts for year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior year amounts have not been restated (refer to Notes 3 and 4)

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(b) Loans and acceptances outstanding by geography[1]

As at October 31 ($ millions)	2018	2017
Canada:		
Residential mortgages	**$ 213,083**	$ 205,793
Personal loans	**72,935**	64,295
Credit cards	**7,361**	13,495
Business and government	**57,918**	52,935
	351,297	336,518
United States:		
Personal loans	**1,193**	1,228
Business and government	**40,613**	35,702
	41,806	36,930
Mexico:		
Residential mortgages	**7,651**	6,911
Personal loans	**3,298**	3,064
Credit cards	**674**	520
Business and government	**15,399**	13,635
	27,022	24,130
Chile:		
Residential mortgages	**15,313**	7,302
Personal loans	**6,023**	3,587
Credit cards	**2,592**	1,744
Business and government	**19,876**	10,109
	43,804	22,742
Peru:		
Residential mortgages	**2,947**	2,735
Personal loans	**3,888**	3,682
Credit cards	**1,575**	1,410
Business and government	**11,707**	10,617
	20,117	18,444
Colombia:		
Residential mortgages	**2,189**	1,999
Personal loans	**3,138**	1,845
Credit cards	**2,255**	1,746
Business and government	**3,996**	3,838
	11,578	9,428
Other International:		
Residential mortgages	**12,174**	12,176
Personal loans	**5,544**	4,471
Credit cards	**2,028**	2,244
Business and government	**41,529**	41,613
	61,275	60,504
Total loans	**556,899**	508,696
Acceptances[2]	**16,329**	13,560
Total loans and acceptances[3]	**573,228**	522,256
Allowance for credit losses[4]	**(5,073)**	(4,327)
Total loans and acceptances net of allowances for loan losses	**$ 568,155**	$ 517,929

(1) Geographic segmentation is based on the location of the property for residential mortgages; otherwise, the residence of the borrower.
(2) 1.6% of borrowers reside outside Canada.
(3) Loans and acceptances denominated in US dollars were $107,944 (2017 – $100,452), in Chilean pesos $37,515 (2017 – $17,824), Mexican pesos $21,561 (2017 – $18,857), and in other foreign currencies $49,223 (2017 – $44,176).
(4) Allowance for credit losses for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior year amount have not been restated (refer to Notes 2, 3, 4).

(c) Loan maturities

As at October 31, 2018	Remaining term to maturity						Rate sensitivity			
($ millions)	Within one year	One to five years	Five to ten years	Over ten years	No specific maturity	Total	Floating	Fixed rate	Non-rate sensitive	Total
Residential mortgages	**$ 49,762**	**$ 180,563**	**$ 10,326**	**$ 11,040**	**$ 1,666**	**$ 253,357**	**$ 59,351**	**$ 191,802**	**$ 2,204**	**$ 253,357**
Personal loans	**17,422**	**35,050**	**4,775**	**693**	**38,079**	**96,019**	**37,003**	**58,007**	**1,009**	**96,019**
Credit cards	**–**	**–**	**–**	**–**	**16,485**	**16,485**	**5,334**	**11,151**	**–**	**16,485**
Business and government	**85,090**	**91,595**	**7,378**	**773**	**6,202**	**191,038**	**138,510**	**50,606**	**1,922**	**191,038**
Total	**$ 152,274**	**$ 307,208**	**$ 22,479**	**$ 12,506**	**$ 62,432**	**$ 556,899**	**$ 240,198**	**$ 311,566**	**$ 5,135**	**$ 556,899**
Allowance for credit losses	**–**	**–**	**–**	**–**	**(5,065)**	**(5,065)**	**–**	**–**	**(5,065)**	**(5,065)**
Total loans net of allowance for credit losses	**$ 152,274**	**$ 307,208**	**$ 22,479**	**$ 12,506**	**$ 57,367**	**$ 551,834**	**$ 240,198**	**$ 311,566**	**$ 70**	**$ 551,834**

As at October 31, 2017	Remaining term to maturity						Rate sensitivity			
($ millions)	Within one year	One to five years	Five to ten years	Over ten years	No specific maturity	Total	Floating	Fixed rate	Non-rate sensitive	Total
Residential mortgages	$ 45,462	$ 171,908	$ 9,098	$ 8,919	$ 1,529	$ 236,916	$ 56,862	$ 178,044	$ 2,010	$ 236,916
Personal loans	15,952	31,500	4,478	815	36,482	89,227	39,004	49,137	1,086	89,227
Credit cards	–	–	–	–	14,104	14,104	4,733	9,371	–	14,104
Business and government	77,724	80,124	4,597	760	5,244	168,449	119,515	47,162	1,772	168,449
Total loans	$ 139,138	$ 283,532	$ 18,173	$ 10,494	$ 57,359	$ 508,696	$ 220,114	$ 283,714	$ 4,868	$ 508,696
Allowance for credit losses	–	–	–	–	(4,327)	(4,327)	–	–	(4,327)	(4,327)
Total loans net of allowance for credit losses	$ 139,138	$ 283,532	$ 18,173	$ 10,494	$ 53,032	$ 504,369	$ 220,114	$ 283,714	$ 541	$ 504,369

(d) Impaired loans(1)(2)

	IFRS 9			IAS 39		
	2018(4)			2017(3)		
As at October 31 ($ millions)	Gross impaired loans(1)	Allowance for credit losses	Net	Gross impaired loans(1)	Allowance for credit losses	Net
Residential mortgages	**$1,797**	**$ 360(5)**	**$1,437**	$ 1,445	$ 326(5)	$ 1,119
Personal loans	**1,069**	**644(5)**	**425**	1,067	1,040(5)	27
Credit cards	**–**	**–(5)**	**–**	543	543(5)	–
Business and government	**2,264**	**673(6)**	**1,591**	1,810	713(6)	1,097
Total	**$5,130**	**$ 1,677**	**$3,453**	$ 4,865	$ 2,622(7)	$ 2,243
By geography:						
Canada	**$ 999**	**381**	**618**	$ 1,049		
United States	**80**	**25**	**55**	140		
Mexico	**359**	**164**	**195**	303		
Peru	**581**	**317**	**264**	704		
Chile	**753**	**158**	**595**	565		
Colombia	**619**	**159**	**460**	462		
Other International	**1,739**	**473**	**1,266**	1,642		
Total	**$5,130**	**1,677**	**3,453**	$ 4,865		

(1) Interest income recognized on impaired loans during the year ended October 31, 2018 was $49 (2017 – $23).
(2) Additional interest income of approximately $370 million would have been recorded if the above loans had not been classified as impaired (2017 – $363 million).
(3) Excludes loans acquired under the Federal Deposit Insurance Corporation (FDIC) guarantee related to the acquisition of R-G Premier Bank of Puerto Rico. For loans where the guarantee has expired, the total amount of loans considered impaired is $59 for 2017.
(4) Amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior year amounts have not been restated (refer to Notes 2, 3 and 4).
(5) Allowance for credit losses for residential mortgages, personal loans and credit card loans is assessed on a collective basis.
(6) Allowance for credit losses for business and government loans is individually assessed.
(7) A portion of the existing allowance for credit losses on impaired loans as at October 31, 2017, was reclassified against performing loans with the adoption of IFRS 9 effective November 1, 2017, to conform with current period presentation.

(e) Allowance for credit losses

Key inputs and assumptions

The Bank's allowance calculations are outputs of complex models with a number of underlying assumptions regarding the choice of variable inputs. Some of the key drivers include the following:

- Changes in risk ratings of the borrower or instrument reflecting changes in their credit quality;
- Changes in the volumes of transactions;
- Changes in the forward-looking macroeconomic environment reflected in the variables used in the models such as GDP growth, unemployment rates, commodity prices, and house price indices, which are most closely related with credit losses in the relevant portfolio;
- Changes in macroeconomic scenarios and the probability weights assigned to each scenario; and
- Borrower migration between the three stages which can result from changes to any of the above inputs and assumptions.

(i) Key macroeconomic variables

(i)(a) The following table shows certain key macroeconomic variables used in modelling the allowance for credit losses for Stages 1 and 2. For the base case, optimistic and pessimistic scenarios, the projections are provided for the next 12 months and for the remaining forecast period, which represents a medium-term view.

	Base Case Scenario		Alternative Scenario – Optimistic		Alternative Scenario – Pessimistic	
	Next 12 Months	Remaining Forecast Period	Next 12 Months	Remaining Forecast Period	Next 12 Months	Remaining Forecast Period
Canada						
Real GDP growth, y/y % change	2.2	1.7	2.6	2.1	1.7	1.2
Unemployment rate, average %	5.9	5.9	5.7	5.0	6.2	6.8
Bank of Canada overnight rate target, average %	2.13	2.87	2.25	3.66	1.98	2.10
HPI – Housing Price Index, y/y % change	5.1	3.7	5.4	4.1	4.9	3.3
CPI – Consumer Price Index, y/y % change	2.7	2.1	2.7	2.6	2.7	1.5
USDCAD exchange rate, average	1.24	1.24	1.24	1.20	1.25	1.27
US						
Real GDP growth, y/y % change	2.7	1.7	3.3	2.4	1.9	1.0
Unemployment rate, average %	4.0	4.1	3.7	3.2	4.3	5.0
Mexico						
Real GDP growth, y/y % change	2.0	2.3	2.7	3.2	1.3	1.4
Unemployment rate, average %	3.7	4.2	3.5	3.4	4.0	4.9
Chile						
Real GDP growth, y/y % change	3.9	3.5	5.0	4.8	2.7	2.3
Unemployment rate, average %	6.2	6.4	5.8	4.5	6.7	8.3
Peru						
Real GDP growth, y/y % change	3.9	3.7	4.8	4.7	3.1	2.5
Unemployment rate, average %	6.3	6.1	5.7	4.5	6.8	7.7
Colombia						
Real GDP growth, y/y % change	3.3	3.2	4.0	4.2	3.0	2.2
Unemployment rate, average %	9.1	8.8	8.7	7.4	9.3	10.0
Caribbean						
Real GDP growth, y/y % change	4.0	4.1	5.2	5.4	2.8	2.9
Global						
WTI oil price, average USD/bbl	71	67	75	84	67	54
Copper price, average USD/lb	2.91	3.11	2.98	3.44	2.84	2.84

(i)(b) The table below provides a comparison between the reported Allowance for Credit Losses (ACL) for financial assets in Stage 1 and Stage 2, and the ACL under the base, optimistic and pessimistic scenarios for such assets.

	Reported under IFRS 9	Base case scenario	Optimistic scenario	Pessimistic scenario
ACL (Stage 1 and Stage 2)	**3,475**	**3,467**	**3,345**	**3,618**

(i)(c) The following table illustrates the impact of staging on the Bank's ACL by comparing the allowance if all performing financial assets were in Stage 1 or if all such assets were in Stage 2 to the actual ACL recorded on these assets.

	Stage 1 and 2 ACL under IFRS 9	ACL – All performing loans in Stage 1	Impact of staging
Financial assets	3,475	3,022	(453)

	Stage 1 and 2 ACL under IFRS 9	ACL – All performing loans in Stage 2	Impact of staging
Financial assets	3,475	5,361	1,886

(ii) Allowance for credit losses on loans

		IFRS 9			
($ millions)	Balance as at November 1, 2017	Provision for credit losses	Net write-offs	Other, including foreign currency adjustment	Balance as at October 31, 2018
Residential mortgages	$ 717	$ 104	$ (123)	$ (20)	$ 678
Personal loans	1,879	1,411	(1,166)	(15)	2,109
Credit cards	1,163	898	(854)	6	1,213
Business and government	1,261	166	(208)	(72)	1,147
	$ 5,020	$ 2,579	$ (2,351)	$ (101)	$ 5,147
Presented as:					
Allowance for credit losses on loans	$ 4,920				$ 5,065
Allowance for credit losses on acceptances	16				8
Allowance for credit losses on off-balance sheet exposures	84				74

Allowancefor credit losses on loans

	IFRS 9			
As at October 31, 2018 ($ millions)	Stage 1	Stage 2	Stage 3	Total
Residential mortgages	**$ 112**	**$ 206**	**$ 360**	**$ 678**
Personal loans	**578**	**887**	**644**	**2,109**
Credit cards	**401**	**812**	**–**	**1,213**
Business and government	**132**	**260**	**673**	**1,065**
Total[1]	**$ 1,223**	**$ 2,165**	**$1,677**	**$ 5,065**

(1) Excludes, allowance for credit losses for other financial assets including acceptances, investment securities, deposits with banks and off-balance sheet credit risks which amounted to $89.

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The following table presents the changes to the allowance for credit losses on loans.

As at October 31, 2018 ($ millions)	IFRS 9 Stage 1	Stage 2	Stage 3	Total
Residential mortgages				
Balance at beginning of the year	$ 103	$ 214	$ 400	$ 717
Provision for credit losses				
Remeasurement[1]	(131)	5	151	25
Newly originated or purchased financial assets	88	–	–	88
Derecognition of financial assets and maturities	(2)	(7)	–	(9)
Changes in models and methodologies	–	–	–	–
Transfer to (from):	–	–	–	–
Stage 1	77	(65)	(12)	–
Stage 2	(18)	106	(88)	–
Stage 3	–	(39)	39	–
Gross write-offs	–	–	(219)	(219)
Recoveries	–	–	96	96
Foreign exchange and other movements	(5)	(8)	(7)	(20)
Balance at end of year[2]	$ 112	$ 206	$ 360	$ 678
Personal loans				
Balance at beginning of the year	$ 477	$ 802	$ 600	$ 1,879
Provision for credit losses				
Remeasurement[1]	(670)	629	1,015	974
Newly originated or purchased financial assets	615	–	–	615
Derecognition of financial assets and maturities	(82)	(96)	–	(178)
Changes in models and methodologies	–	–	–	–
Transfer to (from):	–	–	–	–
Stage 1	453	(442)	(11)	–
Stage 2	(189)	284	(95)	–
Stage 3	(4)	(286)	290	–
Gross write-offs	–	–	(1,441)	(1,441)
Recoveries	–	–	275	275
Foreign exchange and other movements	(22)	(4)	11	(15)
Balance at end of year[2]	$ 578	$ 887	$ 644	$ 2,109
Credit cards				
Balance at beginning of the year	$ 364	$ 799	$ –	$ 1,163
Provision for credit losses				
Remeasurement[1]	(276)	448	593	765
Newly originated or purchased financial assets	329	–	–	329
Derecognition of financial assets and maturities	(91)	(105)	–	(196)
Changes in models and methodologies	–	–	–	–
Transfer to (from):	–	–	–	–
Stage 1	259	(259)	–	–
Stage 2	(162)	162	–	–
Stage 3	(1)	(239)	240	–
Gross write-offs	–	–	(1,104)	(1,104)
Recoveries	–	–	250	250
Foreign exchange and other movements	(21)	6	21	6
Balance at end of year[2]	$ 401	$ 812	$ –	$ 1,213
Business and government				
Balance at beginning of the year	$ 178	$ 307	$ 760	$ 1,245
Provision for credit losses				
Remeasurement[1]	(93)	6	264	177
Newly originated or purchased financial assets	322	–	–	322
Derecognition of financial assets and maturities	(108)	(164)	(68)	(340)
Changes in models and methodologies	3	14	–	17
Transfer to (from):	–	–	–	–
Stage 1	63	(58)	(5)	–
Stage 2	(187)	218	(31)	–
Stage 3	(2)	(30)	32	–
Gross write-offs	–	–	(276)	(276)
Recoveries	–	–	68	68
Foreign exchange and other movements	(3)	(2)	(69)	(74)
Balance at end of period including off-balance sheet exposures[2]	$ 173	$ 291	$ 675	$ 1,139
Less: Allowance for credits losses on off-balance sheet exposures[2][3]	41	31	2	74
Balance at end of year[2]	$ 132	$ 260	$ 673	$ 1,065

(1) Includes credit risk changes as a result of significant increases in credit risk, changes in credit risk that did not result in a transfer between stages, changes in model inputs and assumptions and changes due to drawdowns of undrawn commitments.

(2) Interest income on impaired loans for residential mortgages, personal loans, credit cards, and business and government loans totaled $370.
(3) Allowance for credit losses on off-balance sheet exposures is recorded in other liabilities in the Consolidated Statement of Financial Position.
(4) Allowance for credit losses on acceptances are recorded against the financial asset in the Consolidated Statement of Financial Position.
(5) There are no accumulated credit losses on purchased or originated credit impaired loans.
(6) During the year ended October 31, 2018, the contractual terms of certain financial assets were modified where the modification did not result in derecognition. The amortized cost of such loans that were modified in Stage 3 before the modification was $185.

The following table presents the allowance for credit losses under IAS 39 as at October 31, 2017.

	IAS 39					
	As at and for the year ended October 31, 2017					
($ millions)	Balance at beginning of year	Write-offs	Recoveries	Provision for credit losses	Other, including foreign currency adjustment	Balance at end of year
Individual	$ 894	$ (501)	$ 55	$ 304	$ (39)	$ 713
Collective	3,498	(2,658)	571	1,952	(8)	3,355
Total before loans acquired under FDIC guarantee	4,392	(3,159)	626	2,256	(47)	4,068
Loans acquired under FDIC guarantee(1)	234	(14)	54	(7)	(8)	259
	$ 4,626	$ (3,173)	$ 680	$ 2,249	$ (55)	$ 4,327
Represented by:						
Allowance against impaired loans						$ 2,622
Allowance against performing loans(2)						1,446
Total before loans acquired under FDIC guarantee						4,068
Loans acquired under FDIC guarantee(1)						259
						$ 4,327

(1) This represents the gross amount of allowance for credit losses as the receivable from FDIC is separately recorded in other assets.
(2) The allowance against performing loans is attributable to business and government loans $625 with the remainder allocated to personal and credit card loans $720 and residential mortgages $101.

(f) Carrying value of exposures by risk rating

Residential mortgages	As at October 31, 2018			
Category of PD grades ($ millions)	Stage 1	Stage 2	Stage 3(2)	Total
Very low	**$ 146,461**	**$ 307**	**$ –**	**$ 146,768**
Low	**58,154**	**378**	**–**	**58,532**
Medium	**11,689**	**972**	**–**	**12,661**
High	**1,615**	**3,515**	**–**	**5,130**
Very high	**25**	**1,779**	**–**	**1,804**
Loans not graded(1)	**23,139**	**3,526**	**–**	**26,665**
Default	**–**	**–**	**1,797**	**1,797**
Total	**241,083**	**10,477**	**1,797**	**253,357**
Allowance for credit losses	**112**	**206**	**360**	**678**
Carrying value	**$ 240,971**	**$ 10,271**	**$ 1,437**	**$ 252,679**

(1) Portfolios where the customer account level 'Probability of Default' has not been determined have been included in the 'Loans not graded' category.
(2) Stage 3 includes purchased or originated credit impaired loans.

Personal loans	As at October 31, 2018			
Category of PD grades ($ millions)	Stage 1	Stage 2	Stage 3(2)	Total
Very low	**$ 30,660**	**$ 66**	**$ –**	**$ 30,726**
Low	**26,039**	**151**	**–**	**26,190**
Medium	**8,315**	**402**	**–**	**8,717**
High	**6,686**	**3,647**	**–**	**10,333**
Very high	**58**	**1,362**	**–**	**1,420**
Loans not graded(1)	**15,452**	**2,112**	**–**	**17,564**
Default	**–**	**–**	**1,069**	**1,069**
Total	**87,210**	**7,740**	**1,069**	**96,019**
Allowance for credit losses	**578**	**887**	**644**	**2,109**
Carrying value	**$ 86,632**	**$ 6,853**	**$ 425**	**$ 93,910**

(1) Portfolios where the customer account level 'Probability of Default' has not been determined have been included in the 'Loans not graded' category.
(2) Stage 3 includes purchased or originated credit impaired loans.

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Credit cards

Category of PD grades ($ millions)	As at October 31, 2018 Stage 1	Stage 2	Stage 3(2)	Total
Very low	$ 1,418	$ 5	$ –	$ 1,423
Low	2,436	14	–	2,450
Medium	3,358	71	–	3,429
High	2,929	1,455	–	4,384
Very high	37	697	–	734
Loans not graded(1)	2,905	1,159	–	4,064
Default	–	–	–	–
Total	13,083	3,401	–	16,484
Allowance for credit losses	401	812	–	1,213
Carrying value	$ 12,682	$ 2,589	$ –	$ 15,271

(1) Portfolios where the customer account level 'Probability of Default' has not been determined have been included in the 'Loans not graded' category.
(2) Stage 3 includes purchased or originated credit impaired loans.

Undrawn loan commitments – Retail

Category of PD grades ($ millions)	As at October 31, 2018 Stage 1	Stage 2	Stage 3(2)	Total
Very low	$ 72,321	$ –	$ –	$ 72,321
Low	16,531	2	–	16,533
Medium	6,029	79	–	6,108
High	2,631	670	–	3,301
Very high	26	367	–	393
Loans not graded(1)	14,774	3,364	–	18,138
Default	–	–	–	–
Total	112,312	4,482	–	116,794
Allowance for credit losses	–	–	–	–
Carrying value	$ 112,312	$ 4,482	$ –	$ 116,794

(1) Portfolios where the customer account level 'Probability of Default' has not been determined have been included in the 'Loans not graded' category.
(2) Stage 3 includes purchased or originated credit impaired loans.

Business and government loans

Category of PD grades ($ millions)	As at October 31, 2018 Stage 1	Stage 2	Stage 3(2)	Total
Investment grade	$ 87,047	$ 3,770	$ –	$ 90,817
Non-Investment grade	83,730	9,706	–	93,436
Watch list	130	2,689	–	2,819
Loans not graded(1)	1,050	652	–	1,702
Default	–	–	2,264	2,264
Total	171,957	16,817	2,264	191,038
Allowance for credit losses	132	260	673	1,065
Carrying value	$ 171,825	$ 16,557	$ 1,591	$ 189,973

(1) Portfolios where the customer account level 'Probability of Default' has not been determined have been included in the 'Loans not graded' category.
(2) Stage 3 includes purchased or originated credit impaired loans.

Undrawn loan commitments – Business and government

Category of PD grades ($ millions)	As at October 31, 2018 Stage 1	Stage 2	Stage 3(2)	Total
Investment grade	$ 159,880	$ 1,663	$ –	$ 161,543
Non-Investment grade	56,001	3,445	–	59,446
Watch list	81	977	–	1,058
Loans not graded(1)	2,178	28	–	2,206
Default	–	–	4	4
Total	218,140	6,113	4	224,257
Allowance for credit losses	41	31	2	74
Carrying value	$ 218,099	$ 6,082	$ 2	$ 224,183

(1) Portfolios where the customer account level 'Probability of Default' has not been determined have been included in the 'Loans not graded' category.
(2) Stage 3 includes purchased or originated credit impaired loans.

(g) Loans acquired under FDIC guarantee

Loans purchased as part of the acquisition of R-G Premier Bank of Puerto Rico are subject to loss share agreements with the FDIC. Under this agreement, the FDIC guarantees 80% of net loan losses. As at October 31, 2018, the carrying value of the loans covered by the FDIC guarantee was $1.3 billion (October 31, 2017 – $1.4 billion).

A net receivable of $77 million (2017 – $106 million) from the FDIC is included in Other assets in the Consolidated Statement of Financial Position. The remaining guarantee on single family home loans will expire in April 2020.

(h) Loans past due but not impaired(1)

A loan is considered past due when a counterparty has not made a payment by the contractual due date. The following table presents the carrying value of loans that are contractually past due but not classified as impaired because they are either less than 90 days past due or fully secured and collection efforts are reasonably expected to result in repayment, or restoring it to a current status in accordance with the Bank's policy.

	2018				2017(3)			
As at October 31 ($ millions)	31 – 60 days	61 – 90 days	91 days and greater(2)	Total	31 – 60 days	61 – 90 days	91 days and greater	Total
Residential mortgages	**$ 1,290**	**$ 521**	**$ –**	**$ 1,811**	$ 1,035	$ 446	$ 122	$ 1,603
Personal loans	**609**	**322**	**–**	**931**	522	284	–	806
Credit cards	**231**	**154**	**353**	**738**	202	139	75	416
Business and government	**167**	**40**	**–**	**207**	215	55	187	457
Total	**$ 2,297**	**$ 1,037**	**$ 353**	**$ 3,687**	$ 1,974	$ 924	$ 384	$ 3,282

(1) Loans past due 30 days or less are not presented in this analysis as they are not administratively considered past due.
(2) Under IFRS 9, all loans that are 90 days past due are considered impaired with the exception of credit card receivables which are considered impaired when 180 days past due. Prior amounts have not been restated (refer to Notes 3 and 4).
(3) Excludes loans acquired under the FDIC guarantee related to the acquisition of R-G Premier Bank of Puerto Rico.

(i) Purchased credit-impaired loans

Certain financial assets including loans are credit-impaired on initial recognition either through acquisition or origination.

The following table provides details of such assets:

As at October 31 ($ millions)	2018
Unpaid principal balance(1)	**$ 548**
Credit related fair value adjustments	**(168)**
Carrying value	**380**
Stage 3 allowance	**–**
Carrying value net of related allowance	**$ 380**

(1) Represents principal amount owed net of write-offs.

14 Derecognition of Financial Assets

Securitization of residential mortgage loans

The Bank securitizes fully insured residential mortgage loans, Bank originated and others, through the creation of mortgage backed securities (MBS) under the National Housing Act (NHA) MBS program, sponsored by Canada Mortgage Housing Corporation (CMHC). MBS created under the program are sold to Canada Housing Trust (the Trust), a government sponsored entity, under the Canada Mortgage Bond (CMB) program and/or third-party investors. The Trust issues securities to third-party investors.

The sale of mortgages under the above programs does not meet the derecognition requirements, as the Bank retains thepre-payment and interest rate risk associated with the mortgages, which represents substantially all the risk and rewards associated with the transferred assets.

The transferred mortgages continue to be recognized on the Consolidated Statement of Financial Position as residential mortgage loans. Cash proceeds from the transfer are treated as secured borrowings and included in Deposits – Business and government on the Consolidated Statement of Financial Position.

The following table provides the carrying amount of transferred assets that do not qualify for derecognition and the associated liabilities:

As at October 31 ($ millions)	2018(1)	2017(1)
Assets		
Carrying value of residential mortgage loans	**$20,498**	$ 18,178
Other related assets(2)	**2,679**	2,293
Liabilities		
Carrying value of associated liabilities	**21,459**	19,278

(1) The fair value of the transferred assets is $23,237 (2017 – $20,580) and the fair value of the associated liabilities is $22,468 (2017 – $19,863), for a net position of $769 (2017 – $717).
(2) These include cash held in trust and trust permitted investment assets acquired as part of principal reinvestment account that the Bank is required to maintain in order to participate in the programs.

Securitization of personal lines of credit, credit cards and auto loans

The Bank securitizes a portion of its unsecured personal lines of credit, credit card and auto loan receivables through consolidated structured entities. These receivables continue to be recognized on the Consolidated Statement of Financial Position as personal loans and credit cards loans. For further details, refer to Note 15.

Securities sold under repurchase agreements and securities lent
The Bank enters into transactions, such as repurchase agreements and securities lending agreements, where the Bank transfers assets under agreements to repurchase them on a future date and retains all the substantial risks and rewards associated with the assets. The transferred assets remain on the Consolidated Statement of Financial Position.

The following table provides the carrying amount of the transferred assets and the associated liabilities:

As at October 31 ($ millions)	2018(1)	2017(1)
Carrying value of assets associated with:		
Repurchase agreements(2)	**$ 82,816**	$ 86,789
Securities lending agreements	**49,718**	40,535
Total	**132,534**	127,324
Carrying value of associated liabilities(3)	**$ 101,257**	$ 95,843

(1) The fair value of transferred assets is $132,534 (2017 – $127,324) and the fair value of the associated liabilities is $101,257 (2017 – $95,843), for a net position of $31,277 (2017 – $31,481).
(2) Does not include over-collateralization of assets pledged.
(3) Liabilities for securities lending arrangements only include amounts related to cash collateral received. In most cases, securities are received as collateral.

15 Structured Entities

(a) Consolidated structured entities

U.S. multi-seller conduit
The Bank-sponsored U.S. multi-seller conduit purchases high-quality financial assets from independent third parties (the sellers) funded by the issuance of highly rated asset-backed commercial paper. The sellers continue to service the financial assets and provide credit enhancements through overcollateralization protection and cash reserves.

Each asset purchased by the conduit has a deal-specific liquidity facility provided by the Bank in the form of a Liquidity Asset Purchase Agreement (LAPA). The primary purpose of the backstop liquidity facility is to provide an alternative source of financing in the event the conduit is unable to access the asset-backed commercial paper market. The administration agent can require the Bank in its capacity as liquidity provider to perform under its asset-specific LAPA agreements, in which case the Bank is obliged to purchase an interest in the related assets owned by the conduit. The Bank is not obligated to perform under the LAPA agreements in the event the conduit itself is insolvent.

The Bank's liquidity agreements with the conduit call for the Bank to fund full par value of the assets, including defaulted assets, if any, of the conduit. This facility is available to absorb the losses on defaulted assets, if any, in excess of losses absorbed by deal-specific seller credit enhancements. Further, the Bank holds the subordinated note issued by the conduit.

The Bank's exposure from the U.S. conduit through the LAPA, including the obligation to purchase defaulted assets and investment in the conduit's subordinated note, give the Bank the obligation to absorb losses that could potentially be significant to the conduit, which in conjunction with power to direct the conduit's activities, result in the Bank consolidating the U.S. multi-seller conduit.

The conduit's assets are primarily included in business and government loans on the Bank's Consolidated Statement of Financial Position.

There are contractual restrictions on the ability of the Bank's consolidated U.S. multi-seller conduit to transfer funds to the Bank. The Bank is restricted from accessing the conduit's assets under the relevant arrangements. The Bank has no rights to the assets owned by the conduit. In the normal course of business, the assets of the conduit can only be used to settle the obligations of the conduit.

Bank funding vehicles
The Bank uses funding vehicles to facilitate cost-efficient financing of its own operations, including the issuance of covered bonds and notes. These vehicles include Scotiabank Covered Bond Guarantor Limited Partnership, Halifax Receivables Trust, Trillium Credit Card Trust II and Securitized Term Auto Receivables Trust 2016-1, 2017-1, 2017-2, 2018-1 and 2018-2.

Activities of these structured entities are generally limited to holding an interest in a pool of assets or receivables generated by the Bank.

These structured entities are consolidated due to the Bank's decision-making power and ability to use the power to affect the Bank's returns.

Scotiabank Covered Bond Guarantor Limited Partnership
The Bank has a registered covered bond program through which it issues debt that is guaranteed by Scotiabank Covered Bond Guarantor Limited Partnership (the "LP"). Under this program, the LP purchases uninsured residential mortgages from the Bank, which it acquires with funding provided by the Bank.

As at October 31, 2018, $29.1 billion (2017 – $25.7 billion) covered bonds were outstanding and included in Deposits – Business and government on the Consolidated Statement of Financial Position. The Bank's outstanding covered bonds are denominated in U.S. dollars, Australian dollars, British pounds and Euros. As at October 31, 2018, assets pledged in relation to these covered bonds were uninsured residential mortgages denominated in Canadian dollars of $30.7 billion (2017 – $27.8 billion).

Personal line of credit securitization trust
The Bank securitizes a portion of its Canadian unsecured personal line of credit receivables (receivables) through Halifax Receivables Trust (Halifax), a Bank-sponsored structured entity. Halifax issues notes to third-party investors and the Bank, proceeds of which are used to purchase co-ownership interests in receivables originated by the Bank. Recourse of the note holders is limited to the purchased interests.

The Bank is responsible for servicing the transferred receivables as well as performing administrative functions for Halifax. The subordinated notes issued by Halifax are held by the Bank. As at October 31, 2018, $1 billion notes (2017 – $1 billion) were outstanding and included in Deposits – Business and government on the Consolidated Statement of Financial Position. As at October 31, 2018, assets pledged in relation to these notes were $1.3 billion (2017 – $1.3 billion).

Credit card receivables securitization trust
The Bank securitizes a portion of its Canadian credit card receivables (receivables) through Trillium Credit Card Trust II (Trillium), a Bank-sponsored structured entity. Trillium issues notes to third-party investors and the Bank, and the proceeds of such issuance are used to purchase co-ownership interests in receivables originated by the Bank. Recourse of the note holders is limited to the purchased interest.

The Bank is responsible for servicing the transferred receivables as well as performing administrative functions for Trillium. The subordinated notes issued by Trillium are held by the Bank. As at October 31, 2018, US $1.2 billion ($1.6 billion Canadian dollars) (2017 – US $0.9 billion, $1.2 billion Canadian dollars) Class A notes were outstanding and included in Deposits – Business and government on the Consolidated Statement of Financial Position. As at October 31, 2018 assets pledged in relation to these notes were credit card receivables, denominated in Canadian dollars, of $1.8 billion (2017 – $1.3 billion).

Auto loan receivables securitization trusts
The Bank securitizes a portion of its Canadian auto loan receivables (receivables) through Securitized Term Auto Receivables Trust 2016-1, 2017-1, 2017-2, 2018-1 and 2018-2 (START entities). Each entity is a Bank-sponsored structured entity. START entities issue multiple series of Class A notes to third-party investors and may issue Class A and/or subordinated notes to the Bank, and the proceeds of such issuances are used to purchase discrete pools of retail indirect auto loan receivables from the Bank on a fully serviced basis. Recourse of the note holders is limited to the receivables.

The Bank is responsible for servicing the transferred receivables as well as performing administrative functions for START. The subordinated notes and certain Class A notes issued by START are held by the Bank. As at October 31, 2018, the aggregate Class A notes issued to third parties outstanding and included in Deposits – Business and government on the Consolidated Statement of Financial Position were US $1.8 billion ($2.4 billion Canadian dollars) (2017 – US $1.6 billion, $2.1 billion Canadian dollars). As at October 31, 2018, assets pledged in relation to these notes were Canadian auto loan receivables denominated in Canadian dollars of $3 billion (2017 – $2.3 billion).

Other
Assets of other consolidated structured entities are comprised of securities, deposits with banks and other assets to meet the Bank's and customer needs.

(b) Unconsolidated structured entities

The following table provides information about other structured entities in which the Bank has a significant interest but does not control and therefore does not consolidate. A significant interest is generally considered to exist where the Bank is exposed to 10% or more of the unconsolidated structured entities' maximum exposure to loss.

	As at October 31, 2018			
($ millions)	Canadian multi-seller conduits that the Bank administers	Structured finance entities	Capital funding vehicles	Total
Total assets (on structured entity's financial statements)	**$ 3,216**	**$ 4,488**	**$ 1,520**	**$ 9,224**
Assets recognized on the Bank's financial statements				
Trading assets	**3**	**–**	**–**	**3**
Investment securities	**–**	**1,054**	**17**	**1,071**
Loans[1]	**–**	**978**	**45**	**1,023**
	3	**2,032**	**62**	**2,097**
Liabilities recognized on the Bank's financial statements				
Deposits – Business and government	**–**	**–**	**1,458**	**1,458**
Derivative financial instruments	**6**	**–**	**–**	**6**
	6	**–**	**1,458**	**1,464**
Bank's maximum exposure to loss	**$ 3,219**	**$ 2,032**	**$ 62**	**$ 5,313**

	As at October 31, 2017			
($ millions)	Canadian multi-seller conduits that the Bank administers	Structured finance entities	Capital funding vehicles	Total
Total assets (on structured entity's financial statements)	$ 3,127	$ 3,991	$ 1,520	$ 8,638
Assets recognized on the Bank's financial statements				
Trading assets	–	5	–	5
Investment securities	–	1,091	15	1,106
Loans[1]	–	731	40	771
	–	1,827	55	1,882
Liabilities recognized on the Bank's financial statements				
Deposits – Business and government	–	–	1,465	1,465
Derivative financial instruments	6	–	–	6
	6	–	1,465	1,471
Bank's maximum exposure to loss	$ 3,127	$ 1,827	$ 55	$ 5,009

(1) Loan balances are presented net of allowance for credit losses.

The Bank's maximum exposure to loss represents the notional amounts of guarantees, liquidity facilities, and other credit support relationships with the structured entities, the credit risk amount for certain derivative contracts with the entities and the amount invested where the Bank holds an ownership interest in the structured entities. Of the aggregate amount of maximum exposure to loss as at October 31, 2018, the Bank has recorded $2 billion (2017 – $1.8 billion), primarily its interest in the structured entities, on its Consolidated Statement of Financial Position.

Canadian multi-seller conduits that the Bank administers
The Bank sponsors two Canadian multi-seller conduits. The conduits purchase assets from independent third parties (the sellers) funded by the issuance of asset-backed commercial paper. The sellers continue to service the assets and provide credit enhancements through overcollateralization protection and cash reserves. The Bank has no rights to these assets as they are available to support the obligations of the respective programs, but manages for a fee the commercial paper selling programs. To ensure timely repayment of the commercial paper, each asset pool financed by the multi-seller conduits has a deal-specific LAPA with the Bank. Pursuant to the terms of the LAPA, the Bank as the liquidity provider is obligated to purchase non-defaulted assets, transferred by the conduit at the conduit's original cost as reflected in the table above. In most cases, the liquidity agreements do not require the Bank to purchase defaulted assets. Additionally, the Bank has not provided any program-wide credit enhancement to these conduits. The Bank provides additional liquidity facilities to these multi-seller conduits to a maximum amount of $0.8 billion (2017 – $1.9 billion) based on future asset purchases by these conduits.

Although the Bank has power over the relevant activities of the conduits, it has limited exposure to variability in returns, which results in the Bank not consolidating the two Canadian conduits.

Structured finance entities
The Bank has interests in structured entities used to assist corporate clients in accessing cost-efficient financing through their securitization structures. The Bank may act as an administrator, an investor or a combination of both in these types of structures.

Capital funding vehicles
These entities are designed to pass the Bank's credit risk to the holders of the securities. Therefore the Bank does not have exposure or rights to variable returns from these entities.

(c) Other unconsolidated Bank-sponsored entities

The Bank sponsors unconsolidated structured entities including mutual funds, in which it has insignificant or no interest at the reporting date. The Bank is a sponsor when it is significantly involved in the design and formation at inception of the structured entities, and the Bank's name is used by the structured entities to create an awareness of the instruments being backed by the Bank's reputation and obligation. The Bank also considers other factors, such as its continuing involvement and obligations to determine if, in substance, the Bank is a sponsor. The Bank considers mutual funds and managed companies as sponsored entities.

The following table provides information on revenue from unconsolidated Bank-sponsored entities.

As at October 31 ($ millions)	2018			2017		
	Funds(1)	Scotia Managed Companies	Total	Funds(1)	Scotia Managed Companies	Total
Revenue	**$ 2,118**	**$ 3**	**$ 2,121**	$ 2,016	$ 5	$ 2,021

(1) Includes mutual funds, other funds and trusts.

The Bank earned revenue of $2,121 million (2017 – $2,021 million) from its involvement with the unconsolidated Bank-sponsored structured entities including mutual funds, for the year ended October 31, 2018, which was comprised of interest income of $1 million (2017 – $1 million), non-interest income – banking of $137 million (2017 – $134 million) and non-interest income – wealth management of $1,983 million (2017 – $1,886 million), including mutual fund, brokerage and investment management and trust fees.

16 Property and Equipment

($ millions)	Land & Building	Equipment	Technology Assets	Leasehold Improvements	Total
Cost					
Balance as at October 31, 2016	$ 2,071	$ 1,728	$ 1,983	$ 1,357	$ 7,139
Additions	169	147	161	126	603
Disposals	(224)	(52)	(41)	(28)	(345)
Foreign currency adjustments and other	(294)	69	(15)	(45)	(285)
Balance as at October 31, 2017	**$ 1,722**	**$ 1,892**	**$ 2,088**	**$ 1,410**	**$ 7,112**
Acquisitions	**214**	**96**	**186**	**97**	**593**
Additions	**142**	**56**	**141**	**148**	**487**
Disposals	**(231)**	**(38)**	**(33)**	**(49)**	**(351)**
Foreign currency adjustments and other	**36**	**95**	**(86)**	**(21)**	**24**
Balance as at October 31, 2018	**$ 1,883**	**$ 2,101**	**$ 2,296**	**$ 1,585**	**$ 7,865**
Accumulated depreciation					
Balance as at October 31, 2016	$ 766	$ 1,362	$ 1,653	$ 838	$ 4,619
Depreciation	47	91	131	71	340
Disposals	(58)	(37)	(40)	(17)	(152)
Foreign currency adjustments and other	(69)	34	(25)	(16)	(76)
Balance as at October 31, 2017	**$ 686**	**$ 1,450**	**$ 1,719**	**$ 876**	**$ 4,731**
Depreciation	**62**	**80**	**143**	**69**	**354**
Disposals	**(56)**	**(35)**	**(24)**	**(17)**	**(132)**
Foreign currency adjustments and other	**13**	**174**	**10**	**31**	**228**
Balance as at October 31, 2018	**$ 705**	**$ 1,669**	**$ 1,848**	**$ 959**	**$ 5,181**
Net book value					
Balance as at October 31, 2017	$ 1,036	$ 442	$ 369	$ 534	$ 2,381(1)
Balance as at October 31, 2018	**$ 1,178**	**$ 432**	**$ 448**	**$ 626**	**$ 2,684(1)**

(1) Includes $36 (2017 – $16) of investment property.

17 Investments in Associates

The Bank had significant investments in the following associates:

			2018			2017
As at October 31 ($ millions)	Country of incorporation	Nature of business	Ownership percentage	Date of financial statements(1)	Carrying value	Carrying value
Thanachart Bank Public Company Limited	**Thailand**	**Banking**	**49.0%**	**October 31, 2018**	**$ 2,961**	$ 2,789
Canadian Tire's Financial Services business (CTFS)(2)	**Canada**	**Financial Services**	**20.0%**	**September 30, 2018**	**518**	542
Bank of Xi'an Co. Ltd.	**China**	**Banking**	**19.9%**	**September 30, 2018**	**772**	711
Maduro & Curiel's Bank N.V.(3)	**Curacao**	**Banking**	**48.1%**	**September 30, 2018**	**304**	284

(1) Represents the date of the most recent financial statements. Where available, financial statements prepared by the associates' management or other published information is used to estimate the change in the Bank's interest since the most recent financial statements.
(2) Canadian Tire has an option to sell to the Bank up to an additional 29% equity interest within the next 10 years at the then fair value, that can be settled, at the Bank's discretion, by issuance of common shares or cash. After 10 years, for a period of six months, the Bank has the option to sell its equity interest back to Canadian Tire at the then fair value. As at October 1, 2014 CTFS had total assets of $5,351 and total liabilities of $4,387.
(3) The local regulator requires financial institutions to set aside reserves for general banking risks. These reserves are not required under IFRS, and represent undistributed retained earnings related to a foreign associated corporation, which are subject to local regulatory restrictions. As of October 31, 2018 these reserves amounted to $62 (2017 – $61).

Summarized financial information of the Bank's significant associates are as follows.

	For the twelve months ended(1)		As at	
($ millions)	Revenue	Net income	Total assets	Total liabilities
Thanachart Bank Public Company Limited	**$ 1,871**	**$ 590**	**$ 39,875**	**$ 34,289**
Canadian Tire's Financial Services business (CTFS)	**1,143**	**348**	**6,256**	**5,279**
Bank of Xi'an Co. Ltd.	**1,123**	**456**	**45,261**	**41,595**
Maduro & Curiel's Bank N.V.	**348**	**92**	**5,832**	**5,165**

($ millions)	For the twelve months ended and as at September 30, 2017(1) Revenue	Net income	Total assets	Total liabilities
Thanachart Bank Public Company Limited	$ 1,718	$ 508	$ 38,050	$ 32,902
Canadian Tire's Financial Services business (CTFS)	1,040	334	6,233	5,235
Bank of Xi'an Co. Ltd.	915	411	41,170	37,821
Maduro & Curiel's Bank N.V.	343	80	5,501	4,896

(1) Based on the most recent available financial statements.

18 Goodwill and Other Intangible Assets

Goodwill

The changes in the carrying amounts of goodwill by cash-generating unit (CGU) are as follows:

($ millions)	Canadian Banking	Global Banking and Markets	Latin America	Caribbean and Central America	Total
Balance as at October 31, 2016	$ 3,403	$ 265	$ 2,461	$ 1,255	$ 7,384
Acquisitions	–	–	–	–	–
Dispositions	(36)	–	–	–	(36)
Foreign currency adjustments and other	18	(10)	(61)	(52)	(105)
Balance as at October 31, 2017	3,385	255	2,400	1,203	7,243
Acquisitions	**1,710**	**–**	**1,164**	**–**	**2,874**
Dispositions	**–**	**–**	**–**	**–**	**–**
Foreign currency adjustments and other	**–**	**5**	**(110)**	**(5)**	**(110)**
Balance as at October 31, 2018	**$ 5,095**	**$ 260**	**$ 3,454**	**$ 1,198**	**$ 10,007**

Impairment testing of goodwill

Goodwill acquired in business combinations is allocated to each of the Bank's group of CGUs that are expected to benefit from the synergies of the particular acquisition. Goodwill is assessed for impairment annually or more frequently if events or circumstances occur that may result in the recoverable amount of the CGU falling below its carrying value.

The Bank determines the carrying value of the CGU using a regulatory capital approach based on credit, market, and operational risks, and leverage, consistent with the Bank's capital attribution for business line performance measurement. The recoverable amount is the higher of fair value less costs of disposal and value in use. The recoverable amount for the CGU has been determined using the fair value less costs of disposal method. In arriving at such value for the CGU, the Bank has used price earnings (P/E) multiples applied to normalized net income for the last four quarters as of the test date, a control premium is added based on a five year weighted average acquisition premium paid for comparable companies, and costs of disposal are deducted from the fair value of the CGU. The resulting recoverable amount determined is then compared to its respective carrying amount to identify any impairment. P/E multiples ranging from 11 to 13.5 times (2017 – 11 to 12.5 times) have been used.

The fair value less costs of disposal of the CGU is sensitive to changes in net income, P/E multiples and control premiums.

Goodwill was assessed for annual impairment as at July 31, 2018 and July 31, 2017 and no impairment was determined to exist.

Management believes that reasonable negative changes in any one key assumption used to determine the recoverable amount of the CGU would not result in an impairment. No significant negative changes were noted as of October 31, 2018.

Intangible assets

Intangible assets consist of assets with indefinite and finite useful lives. Indefinite life intangible assets consist substantially of fund management contracts. The fund management contracts are for the management of open-ended funds. Finite life intangible assets include assets such as computer software, customer relationships and core deposit intangibles.

	Finite life		Indefinite life		
($ millions)	Computer software	Other intangibles	Fund management contracts(1)	Other intangibles	Total
Cost					
Balance as at October 31, 2016	$ 2,737	$ 1,631	$ 2,325	$ 68	$ 6,761
Acquisitions	–	–	–	–	–
Additions	584	5	–	–	589
Disposals	(3)	(56)	–	–	(59)
Foreign currency adjustments and other	(40)	(17)	–	–	(57)
Balance as at October 31, 2017	$ 3,278	$ 1,563	$ 2,325	$ 68	$ 7,234
Acquisitions	47	480	2,090	98	2,715
Additions	673	3	–	–	676
Disposals	(8)	–	–	–	(8)
Foreign currency adjustments and other	(44)	(30)	–	–	(74)
Balance as at October 31, 2018	**$ 3,946**	**$ 2,016**	**$ 4,415**	**$ 166**	**$ 10,543**
Accumulated amortization					
Balance as at October 31, 2016	$ 1,009	$ 995	$ –	$ –	$ 2,004
Amortization	339	82	–	–	421
Disposals	(2)	(18)	–	–	(20)
Foreign currency adjustments and other	(25)	(9)	–	–	(34)
Balance as at October 31, 2017	$ 1,321	$ 1,050	$ –	$ –	$ 2,371
Amortization	409	85	–	–	494
Disposals	(8)	–	–	–	(8)
Foreign currency adjustments and other	(17)	(9)	–	–	(26)
Balance as at October 31, 2018	**$ 1,705**	**$ 1,126**	**$ –**	**$ –**	**$ 2,831**
Net book value					
As at October 31, 2017	$ 1,957(2)	$ 513	$ 2,325	$ 68	$ 4,863
As at October 31, 2018	**$ 2,241(2)**	**$ 890**	**$ 4,415**	**$ 166**	**$ 7,712**

(1) Fund management contracts are attributable to HollisWealth Inc. (formerly DundeeWealth Inc.).
(2) Computer software comprises of purchased software of $483 (2017 – $500), internally generated software of $1,208 (2017 – $981), and in process software not subject to amortization of $550 (2017 – $476).

Impairment testing of indefinite life intangible assets

Indefinite life intangible assets are not amortized and are assessed for impairment annually or more frequently if events or changes in circumstances indicate that the asset may be impaired. Impairment is assessed by comparing the carrying value of the indefinite life intangible asset to its recoverable amount. The recoverable amount of the fund management contracts is based on a value in use approach using the multi-period excess earnings method. This approach uses cash flow projections from management-approved financial budgets which include key assumptions related to market appreciation, net sales of funds, and operating margins taking into consideration past experience and market expectations. The forecast cash flows cover a 5-year period, with a terminal growth rate of 4.5% (2017 – 4.5%) applied thereafter. These cash flows have been discounted at a rate of 10% (2017 – 10%).

Indefinite life intangible assets were assessed for annual impairment as at July 31, 2018 and July 31, 2017 and no impairment was determined to exist.

Management believes that reasonable negative changes in any one key assumption used to determine the recoverable amount would not result in an impairment. No significant negative changes were noted as of October 31, 2018.

19 Other Assets

As at October 31 ($ millions)	2018	2017
Accrued interest	**$ 2,800**	$ 2,176
Accounts receivable and prepaids	**1,878**	1,674
Current tax assets	**657**	327
Margin deposit derivatives	**3,247**	3,041
Segregated fund assets	**2,736**	–
Pension assets (Note 28)	**360**	256
Receivable from brokers, dealers and clients	**2,061**	913
Receivable from the Federal Deposit Insurance Corporation (Note 13)	**77**	106
Other	**3,617**	4,256
Total	**$ 17,433**	$ 12,749

20 Deposits

As at October 31 ($ millions)	2018 Payable on demand(1) Interest-bearing	2018 Payable on demand(1) Non-interest bearing	2018 Payable after notice(2)	2018 Payable on a fixed date(3)	2018 Total	2017
Personal	**$ 7,517**	**$ 7,488**	**$ 123,302**	**$ 76,238**	**$ 214,545**	$ 200,030
Business and government	**94,812**	**24,310**	**34,600**	**268,280**	**422,002**	384,988
Financial institutions	**6,510**	**2,804**	**1,895**	**28,778**	**39,987**	40,349
Total	**$ 108,839**	**$ 34,602**	**$ 159,797(4)**	**$ 373,296**	**$ 676,534**	$ 625,367
Recorded in:						
Canada	**$ 84,638**	**$ 17,825**	**$ 122,974**	**$ 247,361**	**$ 472,798**	$ 445,487
United States	**14,080**	**128**	**8,950**	**36,780**	**59,938**	58,070
United Kingdom	**–**	**–**	**152**	**16,695**	**16,847**	12,041
Mexico	**14**	**4,362**	**5,382**	**11,393**	**21,151**	19,419
Peru	**2,738**	**1,284**	**4,129**	**7,062**	**15,213**	15,216
Chile	**3,392**	**3,029**	**146**	**17,613**	**24,180**	11,574
Colombia	**37**	**507**	**3,963**	**5,036**	**9,543**	7,587
Other International	**3,940**	**7,467**	**14,101**	**31,356**	**56,864**	55,973
Total(5)	**$ 108,839**	**$ 34,602**	**$ 159,797**	**$ 373,296**	**$ 676,534**	$ 625,367

(1) Deposits payable on demand include all deposits for which we do not have the right to notice of withdrawal, generally chequing accounts.
(2) Deposits payable after notice include all deposits for which we require notice of withdrawal, generally savings accounts.
(3) All deposits that mature on a specified date, generally term deposits, guaranteed investments certificates and similar instruments.
(4) Includes $141 (2017 – $141) of non-interest bearing deposits.
(5) Deposits denominated in U.S. dollars amount to $219,195 (2017 – $216,018), deposits denominated in Chilean pesos amount to $22,731 (2017 – $11,066), deposits denominated in Mexican pesos amount to $18,341 (2017 – $17,156) and deposits denominated in other foreign currencies amount to $79,582 (2017 – $70,217).

The following table presents the maturity schedule for term deposits in Canada greater than $100,000(1).

($ millions)	Within three months	Three to six months	Six to twelve months	One to five years	Over five years	Total
As at October 31, 2018	**$ 36,670**	**$ 23,913**	**$ 42,830**	**$ 99,734**	**$ 19,872**	**$ 223,019**
As at October 31, 2017	$ 33,678	$ 26,579	$ 31,190	$ 94,563	$ 16,073	$ 202,083

(1) The majority of foreign term deposits are in excess of $100,000.

21 Subordinated Debentures

These debentures are direct, unsecured obligations of the Bank and are subordinate to the claims of the Bank's depositors and other creditors. The Bank, where appropriate, enters into interest rate and cross-currency swaps to hedge the related risks.

As at October 31 ($ millions)			2018	2017
Maturity date	Interest rate (%)	Terms(1)	Carrying value(2)	Carrying value(2)
October 2024	3.036	Redeemable on or after October 18, 2017. After October 18, 2019, interest will be payable at an annual rate equal to the 90-day bankers' acceptance rate plus 1.14%.	**$ 1,740**	$ 1,756
June 2025	8.90	Redeemable at any time.	**259**	260
December 2025(3)	3.367	Redeemable on or after December 8, 2020. After December 8, 2020, interest will be payable at an annual rate equal to the 90 day bankers' acceptance rate plus 2.19%.	**729**	737
December 2025(3)	4.50	US$1,250 million. Interest will be payable semi-annually in arrears on June 16 and December 16 of each year.	**1,645**	1,613
March 2027(3)	2.58	Redeemable on or after March 30, 2022. After March 30, 2022, interest will be payable at an annual rate equal to the 90-day bankers' acceptance rate plus 1.19%.	**1,195**	1,219
November 2037(4)	3.015	JPY 10 billion. Redeemed on November 20, 2017.	**–**	113
April 2038(5)	3.37	JPY 10 billion. Redeemed on April 9, 2018.	**–**	110
August 2085	Floating	US$99 million bearing interest at a floating rate of the offered rate for six-month Eurodollar deposits plus 0.125%. Redeemable on any interest payment date.	**130**	127
			$ 5,698	$ 5,935

(1) In accordance with the provisions of the Capital Adequacy Guideline of the Superintendent, all redemptions are subject to regulatory approval and subject to the terms in the relevant prospectus.
(2) The carrying value of subordinated debentures may differ from par value due to adjustments related to hedge accounting.
(3) These debentures contain non-viability contingent capital (NVCC) provisions. Under such NVCC provisions, the debentures are convertible into a variable number of common shares if OSFI announces that the Bank has ceased, or is about to cease, to be 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, from the federal government or any provincial government or political subdivision or agent thereof without which the Bank would have been determined by OSFI to be non-viable. If such a conversion were to occur, the debentures would be converted into common shares pursuant to an automatic conversion formula defined as 150% of the par value plus accrued and unpaid interest divided by the conversion price. The conversion price is based on the greater of: (i) a floor price of $5.00 or, where applicable, the US dollar equivalent of $5.00 (subject to, in each case, adjustments in certain events as set out in the respective prospectus supplements), and (ii) the current market price of the Bank's common shares at the time of the trigger event (10-day weighted average), where applicable converted from CAD to USD.
(4) On November 29, 2017, the Bank redeemed all outstanding 3.015% subordinated debentures due November 30, 2038 at their par value of JPY 10 billion plus accrued interest.
(5) On April 9, 2018, the Bank redeemed all outstanding 3.370% subordinated debentures due April 9, 2038 at their par value of JPY 10 billion plus accrued interest.

22 Other Liabilities

As at October 31 ($ millions)	2018	2017
Accrued interest	**$ 2,634**	$ 2,172
Accounts payable and accrued expenses	**6,198**	5,867
Current tax liabilities	**435**	408
Deferred tax liabilities (Note 27)	**1,205**	697
Gold and silver certificates and bullion	**5,019**	6,819
Margin and collateral accounts	**6,523**	7,129
Segregated fund liabilities	**2,736**	–
Payables to brokers, dealers and clients	**564**	796
Provisions (Note 23)(1)	**181**	213
Allowance for credit losses on off-balance sheet exposures - IFRS 9 (Note 13)	**74**	n/a
Allowance for credit losses on off-balance sheet exposures - IAS 39(1)	**n/a**	120
Pension liabilities (Note 28)	**593**	808
Other liabilities of subsidiaries and structured entities	**19,933**	12,954
Other	**6,649**	5,331
Total	**$ 52,744**	$ 43,314

(1) Prior year amounts have been reclassified to conform with current period presentation.

23 Provisions

($ millions)	Restructuring	Litigation & other	Total
As at November 1, 2016	$ 277	$ 121	$ 398
Provisions made during the year	–	27	27
Provisions utilized / released during the year	(174)	(38)	(212)
Balance as at October 31, 2017	$ 103	$ 110	$ 213
Provisions made during the year	**–**	**79**	**79**
Provisions utilized / released during the year	**(79)**	**(32)**	**(111)**
Balance as at October 31, 2018	**$ 24**	**$ 157**	**$ 181**

Restructuring charge

During fiscal 2016, the Bank recorded a restructuring provision of $378 million ($278 million after tax) as part of the Bank's efforts to enhance customer experience, reduce costs in a sustainable manner, to achieve greater operational efficiencies, and to simplify the organization. The restructuring charge primarily related to employee severance and was recorded within non-interest expenses. As at October 31, 2018, $24 million of the restructuring provision remains.

Litigation and Other

Other primarily includes provisions related to litigation. In the ordinary course of business, the Bank and its subsidiaries are routinely defendants in, or parties to a number of pending and threatened legal actions and regulatory proceedings, including actions brought on behalf of various classes of claimants. In view of the inherent difficulty of predicting the outcome of such matters, the Bank cannot state what the eventual outcome of such matters will be. However, based on current knowledge, management does not believe that liabilities, if any, arising from pending litigation or regulatory proceedings will have a material adverse effect on the Consolidated Statement of Financial Position or results of operations of the Bank.

Legal provisions are established when it becomes probable that the Bank will incur an expense related to a legal action and the amount can be reliably estimated. Such 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. Management and internal and external experts are involved in estimating any amounts that may be required. The actual costs of resolving these claims may vary significantly from the amount of the legal provisions. The Bank's estimate involves significant judgement, given the varying stages of the proceedings, the fact that the Bank's liability, if any, has yet to be determined and the fact that the underlying matters will change from time to time. As such, there is a possibility that the ultimate resolution of those legal actions may be material to the Bank's consolidated results of operations for any particular reporting period.

24 Common shares, preferred shares and other equity instruments

(a) Common shares

Authorized:

An unlimited number of common shares without nominal or par value.

Issued and fully paid:

	2018		2017	
As at October 31 ($ millions)	Number of shares	Amount	Number of shares	Amount
Outstanding at beginning of year	**1,199,231,715**	**$ 15,644**	1,207,893,604	$ 15,513
Issued in relation to share-based payments, net (Note 26)	**2,238,468**	**135**	5,338,111	313
Issued in relation to the acquisition of a subsidiary or associated corporation	**33,788,141**	**2,573**	–	–
Repurchased for cancellation under the Normal Course Issuer Bid	**(8,230,700)**	**(118)**	(14,000,000)	(182)
Outstanding at end of year	**1,227,027,624**(1)	**$ 18,234**	1,199,231,715(1)	$ 15,644

(1) In the normal course of business, the Bank's regulated Dealer subsidiary purchases and sells the Bank's common shares to facilitate trading/institutional client activity. During fiscal 2018, the number of such shares bought and sold was 14,667,143 (2017 – 15,856,738).

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Dividend

The dividends paid on common shares in fiscal 2018 and 2017 were $3,985 million ($3.28 per share) and $3,668 million ($3.05 per share), respectively. The Board of Directors approved a quarterly dividend of 85 cents per common share at its meeting on November 26, 2018. This quarterly dividend applies to shareholders of record at the close of business on January 2, 2019, and is payable January 29, 2019.

Common shares issued

On May 1, 2018, the Bank issued 11,133,141 common shares at a price of $78.86 per common share in connection with the acquisition of Jarislowsky Fraser. As a result of the issuance, the Bank recorded an increase to equity – common shares of $878 million.

On June 8, 2018, the Bank completed its public offering of 22,655,000 common shares, at a price of $76.15 per common share. As a result of the public offering, the Bank recorded an increase to equity – common shares of $1,696 million, net of transaction costs of $29 million. The Bank has used the proceeds of the public offering to partially fund the acquisition of MD Financial Management.

Normal Course Issuer Bid

On May 29, 2018, the Bank announced that OSFI and TSX approved a normal course issuer bid (the "2018 NCIB") pursuant to which it may repurchase for cancellation up to 24 million of the Bank's common shares. Purchases under the 2018 NCIB will terminate upon earlier of: (i) the Bank purchasing the maximum number of common shares under the 2018 NCIB, (ii) the Bank providing a notice of termination, or (iii) June 3, 2019. On a quarterly basis, the Bank will notify OSFI prior to making purchases. Under the 2018 NCIB, the Bank has cumulatively repurchased and cancelled approximately 5.98 million common shares at an average price of $75.85 per share.

On May 30, 2017, the Bank announced that OSFI and the Toronto Stock Exchange (TSX) approved a normal course issuer bid (the "2017 NCIB") pursuant to which it may repurchase for cancellation up to 24 million of the Bank's common shares. The 2017 NCIB terminated on June 1, 2018. Under the 2017 NCIB, the Bank cumulatively repurchased and cancelled approximately 6.25 million common shares at an average price of $76.41 per share.

During the year ended October 31, 2018, under normal course issuer bids, the Bank repurchased and cancelled approximately 8.23 million common shares (2017 – 14 million) at a volume weighted average price of $76.77 per share (2017 – $72.09) for a total amount of $632 million (2017 – $1,009 million). Approximately 2 million of the common shares purchased were pursuant to a private agreement with an arm's length third party seller and at a discount to the prevailing market price of the Bank's common shares on the TSX at the time of the purchases.

Non-viability Contingent Capital

The maximum number of common shares issuable on conversion of NVCC subordinated debentures, NVCC subordinated additional tier 1 capital securities and NVCC preferred shares as at October 31, 2018 would be 1,835 million common shares (2017 – 1,757 million common shares) based on the floor price and excluding the impact of any accrued and unpaid interest and any declared but unpaid dividends (refer to Note 21 – Subordinated debentures and Note 24(b) – Preferred shares and Other Equity Instruments for further details).

(b) Preferred shares and other equity instruments

Preferred shares

Authorized:

An unlimited number of preferred shares without nominal or par value.

Issued and fully paid:

	2018				2017			
As at October 31 ($ millions)	Number of shares	Amount	Dividends declared per share	Conversion feature	Number of shares	Amount	Dividends declared per share	Conversion feature
Preferred shares:[a]								
Series 18[b]	–	–	**0.418750**	–	7,497,663	187	0.837500	Series 19
Series 19[b]	–	–	**0.374547**	–	6,302,337	158	0.642626	Series 18
Series 20[c]	–	–	**0.902500**	–	8,039,268	201	0.902500	Series 21
Series 21[c]	–	–	**0.691967**	–	5,960,732	149	0.554501	Series 20
Series 22[d][e]	**9,376,944**	**234**	**0.957500**	**Series 23**	9,376,944	234	0.957500	Series 23
Series 23[d][e]	**2,623,056**	**66**	**0.736967**	**Series 22**	2,623,056	66	0.600126	Series 22
Series 30[d][f]	**6,142,738**	**154**	**0.455000**	**Series 31**	6,142,738	154	0.455000	Series 31
Series 31[d][f]	**4,457,262**	**111**	**0.516968**	**Series 30**	4,457,262	111	0.380126	Series 30
Series 32[d][g]	**11,161,422**	**279**	**0.515752**	**Series 33**	11,161,422	279	0.515752	Series 33
Series 33[d][g]	**5,184,345**	**130**	**0.601968**	**Series 32**	5,184,345	130	0.465159	Series 32
Series 34[d][h][i]	**14,000,000**	**350**	**1.375000**	**Series 35**	14,000,000	350	1.375000	Series 35
Series 36[d][h][j]	**20,000,000**	**500**	**1.375000**	**Series 37**	20,000,000	500	1.375000	Series 37
Series 38[d][h][k]	**20,000,000**	**500**	**1.212500**	**Series 39**	20,000,000	500	1.351175	Series 39
Series 40[d][h][l]	**12,000,000**	**300**	**–**	**Series 41**	–	–	–	–
Total preferred shares	**104,945,767**	**$ 2,624**			120,745,767	$ 3,019		

Terms of preferred shares

	First issue date	Issue price	Initial dividend	Initial dividend payment date	Rate reset spread	Redemption date	Redemption price
Preferred shares[a]:							
Series 18[b]	March 25, 2008	25.00	0.431500	July 29, 2008	0.00%	April 26, 2018	25.00
Series 19[b]	April 26, 2013	25.00	0.189250	July 29, 2013	0.00%	April 26, 2018	25.00
Series 20[c]	June 10, 2008	25.00	0.167800	July 29, 2008	0.00%	October 26, 2018	25.00
Series 21[c]	October 26, 2013	25.00	0.167875	January 29, 2014	0.00%	October 26, 2018	25.00
Series 22[d][e]	September 9, 2008	25.00	0.482900	January 28, 2009	1.88%	January 26, 2019	25.00
Series 23[d][e]	January 26, 2014	25.00	0.173875	April 28, 2014	1.88%	January 26, 2014 to January 26, 2019	25.50
Series 30[d][f]	April 12, 2010	25.00	0.282200	July 28, 2010	1.00%	April 26, 2020	25.00
Series 31[d][f]	April 26, 2015	25.00	0.095500	July 29, 2015	1.00%	April 26, 2015 to April 26, 2020	25.50
Series 32[d][g]	February 28, 2011	25.00	0.215410	April 27, 2011	1.34%	February 2, 2021	25.00
Series 33[d][g]	February 2, 2016	25.00	0.105690	April 27, 2016	1.34%	February 2, 2016 to February 2, 2021	25.50
Series 34[d][h][i]	December 17, 2015	25.00	0.497300	April 27, 2016	4.51%	April 26, 2021	25.00
Series 36[d][h][j]	March 14, 2016	25.00	0.508600	July 27, 2016	4.72%	July 26, 2021	25.00
Series 38[d][h][k]	September 16, 2016	25.00	0.441800	January 27, 2017	4.19%	January 27, 2022	25.00
Series 40[d][h][l]	October 12, 2018	25.00	0.362100	January 29, 2019	2.43%	January 27, 2024	25.00

(a) Non-cumulative preferential cash dividends on all series are payable quarterly, as and when declared by the Board. Dividends on theNon-cumulative 5-Year Rate Reset Preferred Shares (Series 22, 30 and 32) and the Non-cumulative 5-Year Rate Reset Preferred Shares Non Viability Contingent Capital (NVCC) (Series 34, 36, 38, and 40) are payable at the applicable rate for the initial five-year fixed rate period ending one day prior to the redemption date. Subsequent to the initial five-year fixed rate period, and resetting every five years thereafter, the dividend on such Rate Reset Preferred Shares will be determined by the sum of the 5-year Government of Canada Yield plus the indicated rate reset spread, multiplied by $25.00. If outstanding, non-cumulative preferential cash dividends on the Series 23, 31, 33, 35, 37, 39, and 41 are payable quarterly, as and when declared by the Board. Dividends on the Non-cumulative 5-Year Rate Reset Preferred Shares (Series 23, 31 and 33) and the Non-cumulative 5-Year Rate Reset Preferred Shares NVCC (Series 35, 37, 39, and 41) are payable, at a rate equal to the sum of the three month Government of Canada Treasury Bill rate plus the rate reset spread of the converted preferred shares, multiplied by $25.00. For each of the years presented, the Bank paid all of the non-cumulative preferred share dividends.

(b) On April 26, 2018, the Bank redeemed all outstanding Non-cumulative Preferred Shares Series 18 and Series 19 and paid dividends of $0.209375 and $0.181788 per share, respectively.

(c) On October 26, 2018, the Bank redeemed all outstanding Non-Cumulative Preferred Shares 20 and 21 and paid a dividend of $0.225625 and $0.187403, respectively, per share.

(d) Holders of Fixed Rate Reset Preferred Shares will have the option to convert shares into an equal number of the relevant series of Floating Rate Preferred Shares on the applicable Rate Reset Series conversion date and every five years thereafter. Holders of Floating Rate Reset Preferred Shares have reciprocal conversion options into the relevant series of Fixed Rate Reset Preferred Shares. With respect to Series 22 and 23, 30 and 31, 32 and 33, 34 and 35, 36 and 37, 38 and 39, and 40 and 41, if the Bank determines that, after giving effect to any Election Notices received, there would be less than 1,000,000 Fixed Rate or Floating Rate Preferred Shares of such Series issued and outstanding on an applicable conversion date, then all of the issued and outstanding preferred shares of such Series will automatically be converted into an equal number of the preferred shares of the other relevant Series.

(e) Holders of Series 22 Non-cumulative 5-Year Rate Reset Preferred Shares will have the option to convert shares into an equal number of Series 23 non-cumulative floating rate preferred shares on January 26, 2019, and on January 26 every five years thereafter. With regulatory approval, the Series 22 preferred shares may be redeemed by the Bank on January 26, 2019, and every five years thereafter, respectively, at $25.00 per share, together with declared and unpaid dividends. With regulatory approval, the Series 23 Non-cumulative Preferred Shares may be redeemed by the Bank at (i) $25.00 together with all declared and unpaid dividends to the date fixed for redemption in the case of redemptions on January 26, 2019 and on January 26 every five years thereafter, or (ii) $25.50 together with all declared and unpaid dividends to the date fixed for redemption on any other date after January 26, 2014.

(f) Holders of Series 30 Non-cumulative 5-Year Rate Reset Preferred Shares will have the option to convert shares into an equal number of Series 31 non-cumulative floating rate preferred shares on April 26, 2020, and on April 26 every five years thereafter. With regulatory approval, the Series 30 preferred shares may be redeemed by the Bank on April 26, 2020, and every five years thereafter, respectively, at $25.00 per share, together with declared and unpaid dividends. With regulatory approval, the Series 31 Non-cumulative Preferred Shares may be redeemed by the Bank at (i) $25.00 together with all declared and unpaid dividends to the date fixed for redemption in the case of redemptions on April 26, 2020 and on April 26 every five years thereafter, or (ii) $25.50 together with all declared and unpaid dividends to the date fixed for redemption on any other date after April 26, 2015.

(g) Holders of Series 32 Non-cumulative 5-Year Rate Reset Preferred Shares will have the option to convert shares into an equal number of Series 33 non-cumulative floating rate preferred shares on February 2, 2021 and on February 2 every five years thereafter. With regulatory approval, the Series 32 preferred shares may be redeemed by the Bank on February 2, 2021, and every five years thereafter, at $25.00 per share, together with declared and unpaid dividends. With regulatory approval, the Series 33 Non-cumulative Preferred Shares may be redeemed by the Bank at (i) $25.00 together with all declared and unpaid dividends to the date fixed for redemption in the case of redemptions on February 2, 2021

and on February 2 every five years thereafter, or (ii) $25.50 together with all declared and unpaid dividends to the date fixed redemption on any other date after February 2, 2016.

(h) These preferred shares contain NVCC provisions necessary for the shares to qualify as Tier 1 regulatory capital under Basel III.

(i) Holders of Series 34 Non-cumulative 5-Year Rate Reset Preferred Shares (NVCC) will have the option to convert shares into an equal number of Series 35 non-cumulative floating rate preferred shares on April 26, 2021, and on April 26 every five years thereafter. With regulatory approval, Series 34 preferred shares may be redeemed by the Bank on April 26, 2021 and every five years thereafter, and for Series 35 preferred shares (NVCC), if applicable, on April 26, 2026 and every five years thereafter, at $25.00 per share, together with declared and unpaid dividends.

(j) Holders of Series 36 Non-cumulative 5-Year Rate Reset Preferred Shares (NVCC) will have the option to convert shares into an equal number of Series 37 non-cumulative floating rate preferred shares (NVCC) on July 26, 2021, and on July 26 every five years thereafter. With regulatory approval, Series 36 preferred shares may be redeemed by the Bank on July 26, 2021 and every five years thereafter, and for Series 37 preferred shares, if applicable, on July 26, 2026 and every five years thereafter, at $25.00 per share, together with declared and unpaid dividends.

(k) Holders of Series 38 Non-cumulative 5-Year Rate Reset Preferred Shares (NVCC) will have the option to convert shares into an equal number of Series 39 non-cumulative floating rate preferred shares (NVCC) on January 27, 2022, and on January 27 every five years thereafter. With regulatory approval, Series 38 preferred shares may be redeemed by the Bank on January 27, 2022 and every five years thereafter, and for Series 39 preferred shares, if applicable, on January 27, 2027 and every five years thereafter, at $25.00 per share, together with declared and unpaid dividends.

(l) On October 12, 2018, the Bank issued 12 million Non-Cumulative 5-year Rate Reset Preferred Shares Series 40 (NVCC) for $300 million. The initial dividend, if declared, will be payable on January 29, 2019. Holder of Series 40, Non-Cumulative 5-Year Rate Reset Preferred Shares (NVCC) will have the option to convert shares into equal number of Non-Cumulative Floating Rate Preferred Shares Series 41 (NVCC), on January 27, 2024 and on January 27 every five years thereafter. With regulatory approval, Series 40 may be redeemed by the Bank on January 27, 2024 and every five years thereafter, and for Series 41, if applicable, on January 27, 2029 and every five years thereafter, at $25.00 per share together with declared and unpaid dividends.

Under NVCC provisions, NVCC preferred shares Series 34, 35, 36, 37, 38, 39, 40 and 41, if outstanding, are convertible into a variable number of common shares if OSFI announces that the Bank has ceased, or is about to cease, to be 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, from the federal government or any provincial government or political subdivision or agent thereof without which the Bank would have been determined by OSFI to be non-viable. If such a conversion were to occur, NVCC preferred shares Series 34, 35, 36, 37, 38, 39, 40 and 41, if outstanding, would be converted into common shares pursuant to an automatic conversion formula defined as 100% times the share value of $25.00 plus declared and unpaid dividends divided by the conversion price. The conversion price is based on the greater of: (i) a floor price of $5.00 or (subject to adjustments in certain events as set out in their respective prospectus supplements), and (ii) the current market price of the Bank's common shares at the time of the trigger event (10-day weighted average).

Other equity instruments

Other equity instruments of $1,560 million (US$1.25 billion) include USD-denominated perpetual fixed to floating rate non-cumulative subordinated additional Tier 1 capital securities (NVCC).

The terms of the notes are described below:

- The price per note is USD $1,000, with interest paid semi-annually in arrears at 4.65% per annum, for the initial five years. Thereafter, the interest will reset quarterly and accrue at a rate per annum equal to three-month LIBOR plus 2.648%.
- While interest is payable on a semi-annual basis for the initial five year period, and quarterly thereafter, the Bank may, at its discretion, with notice, cancel the payments. If the Bank does not pay the interest in full to the note holders, the Bank will not declare dividends on its common or preferred shares or redeem, purchase or otherwise retire such shares until the month commencing after the Bank resumes full interest payments on the notes.
- The notes are redeemable at par 5 years after issuance solely at the option of the Bank, or following a regulatory or tax event, as described in the offering documents. All redemptions are subject to regulatory consent.
- The notes are the Bank's direct unsecured obligations, ranking subordinate to all of the Bank's subordinated indebtedness.
- NVCC provisions require the conversion of these capital instruments into a variable number of common shares if OSFI announces that the Bank has ceased, or is about to cease, to be 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, from the federal government or any provincial government or political subdivision or agent thereof without which the Bank would have been determined by OSFI to be non-viable. If such a conversion were to occur, outstanding NVCC subordinated additional Tier 1 capital securities, would be converted into common shares pursuant to an automatic conversion formula defined as 125% of the par value plus accrued and unpaid interest divided by the conversion price. The conversion price is based on the greater of: (i) the U.S. dollar equivalent of $5.00 (subject to adjustments in certain events as set out in their respective prospectus supplements), and (ii) the U.S. dollar equivalent of the current market price of the Bank's common shares at the time of the trigger event (10-day weighted average). The U.S. dollar equivalents of the floor price and the current market price are based on the mid-day CAD/USD exchange rate on the day prior to the trigger event.

The notes have been determined to be compound instruments that have both equity and liability features. At inception, the fair value of the liability component is initially measured with any residual amount assigned to the equity component. On the date of issuance, the Bank has assigned an insignificant value to the liability component of the notes and, as a result, the proceeds received upon issuance of the notes have been presented as equity. The Bank will continue to monitor events that could impact the value of the liability component.

During the year ended October 31, 2018, the Bank paid interest of US$58 million (2017 - nil) in respect of these notes.

(c) Restrictions on dividend payments

Under the Bank Act, the Bank is prohibited from declaring any dividends on its common or preferred shares when the Bank is, or would be placed by such a declaration, in contravention of the capital adequacy, liquidity or any other regulatory directives issued under the Bank Act. In addition, common share dividends cannot be paid unless all dividends to which preferred shareholders are then entitled have been paid or sufficient funds have been set aside to do so.

In the event that applicable cash distributions on any of the Scotiabank Trust Securities are not paid on a regular distribution date, the Bank has undertaken not to declare dividends of any kind on its preferred or common shares. Similarly, should the Bank fail to declare regular dividends on any of its directly issued outstanding preferred or common shares, cash distributions will also not be made on any of the Scotiabank Trust Securities.

In the event that distributions on the Bank's subordinated additional Tier 1 capital securities (NVCC) are not paid in full, the Bank has undertaken not to declare dividends on its common or preferred shares until the month commencing after such distributions have been made in full.

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

25 Capital Management

The primary regulator over the Bank's consolidated capital adequacy is the Office of the Superintendent of Financial Institutions, Canada (OSFI). The capital adequacy regulations in Canada are largely consistent with international standards set by the Basel Committee on Banking Supervision (BCBS). OSFI requires Canadian deposit-taking institutions to fully implement the 2019 Basel III reforms, without the transitional phase-in provisions for capital deductions (referred to as 'all-in'), and achieve minimums of 7%, 8.5% and 10.5% for CET1, Tier 1 and Total Capital, respectively. OSFI has also designated the Bank as a domestic systemically important bank (D-SIB), increasing its minimum capital ratio requirements by 1% across all tiers of capital effective January 1, 2016, in line with the requirements for global systemically important banks.

In addition to risk-based capital requirements, the Basel III reforms introduced a simpler, non risk-based Leverage ratio requirement to act as a supplementary measure to its risk-based capital requirements. Institutions are expected to maintain a material operating buffer above the 3% minimum.

The Bank's regulatory capital ratios were as follows:

As at October 31 ($ millions)	2018(3) All-in	2017 All-in	2017 Transitional
Capital			
Common Equity Tier 1 Capital	**$ 44,443**	$ 43,352	$ 46,051
Net Tier 1 Capital	**50,187**	49,473	50,623
Total regulatory capital	**57,364**	56,113	57,222
Risk-weighted assets/exposures used in calculation of capital ratios			
CET1 risk-weighted assets(1)(2)	**$ 400,507**	$ 376,379	$ 387,292
Tier 1 risk-weighted assets(1)(2)	**400,680**	376,379	387,292
Total risk-weighted assets(1)(2)	**400,853**	376,379	387,292
Leverage exposures	**1,119,099**	1,052,891	1,053,928
Capital ratios			
Common Equity Tier 1 Capital ratio	**11.1%**	11.5%	11.9%
Tier 1 capital ratio	**12.5%**	13.1%	13.1%
Total capital ratio	**14.3%**	14.9%	14.8%
Leverage ratio	**4.5%**	4.7%	4.8%

(1) In accordance with OSFI's requirements, scalars for CVA risk-weighted assets of 0.80, 0.83 and 0.86 (0.72, 0.77 and 0.81 in 2017) were used to compute the CET1 capital ratio, Tier 1 capital ratio and Total capital ratio, respectively.

(2) Since the introduction of Basel II in 2008, OSFI has prescribed a minimum capital floor for institutions that use the advanced internal ratings-based approach for credit risk. The Basel I capital floor add-on is determined by comparing a capital requirement calculated by reference to Basel I against the Basel III calculation, as specified by OSFI. A shortfall in the Basel III capital requirement as compared with the Basel I floor is added to RWA. OSFI replaced the Basel I regulatory capital floor with a capital floor based on the Basel II standardized approach for credit risk, effective April 30, 2018. Revised capital floor requirements also include risk-weighted assets for market risk and CVA. Under this new Basel II regulatory capital floor requirement, the Bank does not have a capital floor add-on as at October 31, 2018 (as at October 31, 2017 – Basel I floor add-on: CET1 $12.8 billion, Tier 1 $12.6 billion, and Total Capital $12.4 billion).

(3) The Transitional approach is no longer applicable effective Fiscal 2018.

The Bank substantially exceeded the OSFI minimum capital ratios as at October 31, 2018, including the Domestic Stability Buffer requirement.

26 Share-Based Payments

(a) Stock option plans

The Bank grants stock options and stand-alone stock appreciation rights (SARs) as part of the Employee Stock Option Plan. Options to purchase common shares and/or to receive an equivalent cash payment, as applicable, may be granted to selected employees at an exercise price of the higher of the closing price of the Bank's common shares on the Toronto Stock Exchange (TSX) on the trading day prior to the grant date or the volume weighted average trading price for the five trading days immediately preceding the grant date.

Stock Options granted since December 2014 vest 50% at the end of the third year and 50% at the end of the fourth year. This change is prospective and does not impact prior period grants. Stock Options are exercisable no later than 10 years after the grant date. In the event that the expiry date falls within an insider trading blackout period, the expiry date will be extended for 10 business days after the end of the blackout period. As approved by the shareholders, a total of 129 million common shares have been reserved for issuance under the Bank's Employee Stock Option Plan of which 106.8 million common shares have been issued as a result of the exercise of options and 14 million common shares are committed under outstanding options, leaving 8.2 million common shares available for issuance as options. Outstanding options expire on dates ranging from December 5, 2018 to December 7, 2027.

The cost of these options is recognized on a graded vesting basis except where the employee is eligible to retire prior to a tranche's vesting date, in which case the cost is recognized between the grant date and the date the employee is eligible to retire.

The stock option plans include:

- Tandem stock appreciation rights

Employee stock options granted between December 2, 2005 to November 1, 2009 have Tandem SARs, which provide the employee the choice to either exercise the stock option for shares, or to exercise the Tandem SARs and thereby receive the intrinsic value of the stock option in cash. As at October 31, 2018, 3,900 Tandem SARs were outstanding (2017 – 5,900).

The share-based payment liability recognized for vested Tandem SARs as at October 31, 2018 was $0.1 million (2017 – nil). The corresponding intrinsic value of this liability as at October 31, 2018 was $0.2 million (2017 – nil).

In 2018, an expense of $0.6 million (2017 – $0.4 million expense) was recorded in salaries and employee benefits in the Consolidated Statement of Income. This expense is net of losses arising from derivatives used to manage the volatility of share-based payments of nil (2017 – $0.3 million gains).

- Stock options

Employee stock options granted beginning December 2009 are equity-classified stock options which call for settlement in shares and do not have Tandem SARs features.

The amount recorded in equity – other reserves for vested stock options as at October 31, 2018 was $164 million (2017 – $177 million).

In 2018, an expense of $7 million (2017 – $7 million) was recorded in salaries and employee benefits in the Consolidated Statement of Income. As at October 31, 2018, future unrecognized compensation cost for non-vested stock options was $4 million (2017 – $4 million) which is to be recognized over a weighted-average period of 2.07 years (2017 – 1.90 years).

- Stock appreciation rights

Stand-alone SARs are granted instead of stock options to selected employees in countries where local laws may restrict the Bank from issuing shares. When a SAR is exercised, the Bank pays the appreciation amount in cash equal to the rise in the market price of the Bank's common shares since the grant date.

During fiscal 2018, 53,056 SARs were granted (2017 – 60,840) and as at October 31, 2018, 1,073,146 SARs were outstanding (2017 – 1,275,608), of which 1,032,495 SARs were vested (2017 – 1,229,330).

The share-based payment liability recognized for vested SARs as at October 31, 2018 was $14 million (2017 – $31 million). The corresponding intrinsic value of this liability as at October 31, 2018 was $27 million (2017 – $28 million).

In 2018, a benefit of $3 million (2017 – benefit of $2 million) was recorded in salaries and employee benefits in the Consolidated Statement of Income. This benefit is net of losses arising from derivatives used to manage the volatility of share-based payment of $8 million (2017 – $20 million gains).

Determination of fair values

The share-based payment liability and corresponding expense for SARs and options with Tandem SAR features were quantified using the Black-Scholes option pricing model with the following assumptions and resulting fair value per award:

As at October 31	2018	2017
Assumptions		
Risk-free interest rate%	**2.26% - 2.34%**	1.38% - 1.59%
Expected dividend yield	**4.58%**	3.61%
Expected price volatility	**13.75% - 28.12%**	15.3% - 23.38%
Expected life of option	**0.00 - 4.58 years**	0.00 - 4.53 years
Fair value		
Weighted-average fair value	**$ 13.39**	$ 25.72

The share-based payment expense for stock options, i.e., without Tandem SAR features, was quantified using the Black-Scholes option pricing model on the date of grant. The fiscal 2018 and 2017 stock option grants were fair valued using the following weighted-average assumptions and resulting fair value per award:

	2018 Grant	2017 Grant
Assumptions		
Risk-free interest rate %	**1.73%**	1.27%
Expected dividend yield	**3.62%**	3.81%
Expected price volatility	**15.86%**	17.24%
Expected life of option	**6.64 years**	6.67 years
Fair value		
Weighted-average fair value	**$ 7.68**	$ 6.51

The risk-free rate is based on Canadian treasury bond rates interpolated for the maturity equal to the expected life until exercise of the options. Expected dividend yield is based on historical dividend payout. Expected price volatility is determined based on the historical volatility for compensation. For accounting purposes, an average of the market consensus implied volatility for traded options on our common shares and the historical volatility is used.

Details of the Bank's Employee Stock Option Plan are as follows[1]:

As at October 31	2018 Number of stock options (000's)	2018 Weighted average exercise price	2017 Number of stock options (000's)	2017 Weighted average exercise price
Outstanding at beginning of year	**15,555**	**$ 57.42**	19,852	$ 54.55
Granted	**988**	**81.81**	1,141	74.14
Exercised as options	**(2,238)**	**51.37**	(5,338)	50.25
Exercised as Tandem SARs	**(19)**	**41.95**	(33)	52.59
Forfeited	**(146)**	**65.93**	(67)	65.97
Expired	**–**	**–**	–	–
Outstanding at end of year[2]	**14,140**	**$ 60.02**	15,555	$ 57.42
Exercisable at end of year[2]	**10,176**	**$ 55.76**	10,980	$ 53.44
Available for grant	**8,334**		9,156	

	Options Outstanding			Options Exercisable	
As at October 31, 2018	Number of stock options (000's)	Weighted average remaining contractual life (years)	Weighted average exercise price	Number of stock options (000's)	Weighted average exercise price
Range of exercise prices					
$33.89 to $47.75	**1,571**	**0.84**	**$ 44.02**	**1,571**	**$ 44.02**
$49.93 to $55.21	**1,838**	**3.00**	**$ 50.30**	**1,838**	**$ 50.30**
$55.63 to $60.67	**4,794**	**4.18**	**$ 56.88**	**3,606**	**$ 55.63**
$63.98 to $81.81	**5,937**	**6.40**	**$ 69.80**	**3,161**	**$ 64.91**
	14,140	**4.59**	**$ 60.02**	**10,176**	**$ 55.76**

(1) Excludes SARs.
(2) Includes options of 3,900 Tandem SARs (2017 – 5,900) and 130,000 options originally issued under HollisWealth plans (2017 – 156,520).

(b) Employee share ownership plans

Eligible employees can contribute up to a specified percentage of salary towards the purchase of common shares of the Bank. In general, the Bank matches 50% of eligible contributions, up to a maximum dollar amount, which is expensed in salaries and employee benefits. During 2018, the Bank's contributions totalled $55 million (2017 – $54 million). Contributions, which are used to purchase common shares in the open market, do not result in a subsequent expense to the Bank from share price appreciation.

As at October 31, 2018, an aggregate of 16 million common shares were held under the employee share ownership plans (2017 – 18 million). The shares in the employee share ownership plans are considered outstanding for computing the Bank's basic and diluted earnings per share.

(c) Other share-based payment plans

Other share-based payment plans use notional units that are valued based on the Bank's common share price on the TSX. These units accumulate dividend equivalents in the form of additional units based on the dividends paid on the Bank's common shares. These plans are settled in cash and, as a result, are liability-classified. Fluctuations in the Bank's share price change the value of the units, which affects the Bank's share-based payment expense. As described below, the value of a portion of the Performance Share Unit notional units also varies based on Bank performance. Upon exercise or redemption, payments are made to the employees with a corresponding reduction in the accrued liability.

In 2018, an aggregate expense of $188 million (2017 – $203 million) was recorded in salaries and employee benefits in the Consolidated Statement of Income for these plans. This expense includes losses from derivatives used to manage the volatility of share-based payment of $85 million (2017 – $160 million gains).

As at October 31, 2018, the share-based payment liability recognized for vested awards under these plans was $745 million (2017 – $946 million).

Details of these other share-based payment plans are as follows:

Deferred Stock Unit Plan (DSU)

Under the DSU Plan, senior executives may elect to receive all or a portion of their cash bonus under the Annual Incentive Plan (which is expensed for the year awarded in salaries and employee benefits in the Consolidated Statement of Income) in the form of deferred stock units which vest immediately. In addition the DSU plan allows for eligible executives of the Bank to participate in grants that are not allocated from the Annual Incentive Plan election. These grants are subject to specific vesting schedules. Units are redeemable in cash only when an executive ceases to be a Bank employee, and must be redeemed by December 31 of the year following that event. As at October 31, 2018, there were 939,290 units (2017 – 755,472) awarded and outstanding of which 795,783 units were vested (2017 – 684,017).

Directors' Deferred Stock Unit Plan (DDSU)

Under the DDSU Plan, non-officer directors of the Bank may elect to receive all or a portion of their fee for that fiscal year (which is expensed by the Bank in other expenses in the Consolidated Statement of Income) in the form of deferred stock units which vest immediately. Units are redeemable in cash, only following resignation or retirement, and must be redeemed by December 31 of the year following that event. As at October 31, 2018, there were 314,424 units outstanding (2017 – 299,867).

Restricted Share Unit Plan (RSU)

Under the RSU Plan, selected employees receive an award of restricted share units which, for the majority of grants, vest at the end of three years. There are certain grants that provide for a graduated vesting schedule. Upon vesting all RSU units are paid in cash to the employee. The share-based payment expense is recognized evenly over the vesting period except where the employee is eligible to retire prior to the vesting date in which case, the expense is recognized between the grant date and the date the employee is eligible to retire. As at October 31, 2018, there were 2,639,165 units (2017 – 2,197,100) awarded and outstanding of which 1,665,885 were vested (2017 – 1,497,340).

Performance Share Unit Plan (PSU)
Eligible executives receive an award of performance share units, for the majority of grants vest at the end of three years. One grant provides for a graduated vesting schedule which includes a specific performance factor calculation. A portion of the PSU awards are subject to performance criteria measured over a three-year period whereby a multiplier factor is applied which impacts the incremental number of outstanding shares due to employees. The three-year performance measures include return on equity compared to target and total shareholder return relative to a comparator group selected prior to the granting of the award. The Bank uses a probability-weighted-average of potential outcomes to estimate the multiplier impact. The share-based payment expense is recognized over the vesting period except where the employee is eligible to retire prior to the vesting date; in which case, the expense is recognized between the grant date and the date the employee is eligible to retire. This expense varies based on changes in the Bank's share price and the Bank's performance compared to the performance measures. Upon vesting, the units are paid in cash to the employee. As at October 31, 2018, there were 7,813,011 units (2017 – 8,250,143) outstanding subject to performance criteria, of which 6,403,107 units were vested (2017 – 6,718,738).

Deferred Performance Plan
Under the Deferred Performance Plan, a portion of the bonus received by Global Banking and Markets employees (which is accrued and expensed in the year to which it relates) is allocated to qualifying employees in the form of units. These units are subsequently paid in cash to the employees over each of the following three years. Changes in the value of the units, which arise from fluctuations in the market price of the Bank's common shares, are expensed in the same manner as the Bank's other liability-classified share-based payment plans in the salaries and employee benefits expense in the Consolidated Statement of Income. As at October 31, 2018, there were 1,251,576 units outstanding (2017 – 1,587,037). November 30, 2017 was the last grant under this plan, there will be no further grants.

27 Corporate Income Taxes

Corporate income taxes recorded in the Bank's consolidated financial statements for the years ended October 31 are as follows:

(a) Components of income tax provision

For the year ended October 31 ($ millions)	2018	2017	2016
Provision for income taxes in the Consolidated Statement of Income:			
Current income taxes:			
Domestic:			
Federal	**$ 797**	$ 533	$ 467
Provincial	**633**	424	386
Adjustments related to prior periods	**(25)**	24	4
Foreign	**994**	903	935
Adjustments related to prior periods	**(14)**	(29)	(19)
	2,385	1,855	1,773
Deferred income taxes:			
Domestic:			
Federal	**34**	33	141
Provincial	**16**	16	70
Foreign	**(53)**	129	46
	(3)	178	257
Total provision for income taxes in the Consolidated Statement of Income	**$ 2,382**	$ 2,033	$ 2,030
Provision for income taxes in the Consolidated Statement of Changes in Equity:			
Current income taxes	**$ (136)**	$ 82	$ (158)
Deferred income taxes	**(193)**	198	(168)
	(329)	280	(326)
Reported in:			
Other Comprehensive Income	**(145)**	275	(322)
Retained earnings	**(194)**	(1)	(10)
Accumulated Other Comprehensive Income	**18**	–	–
Common shares	**(10)**	1	1
Other reserves	**2**	5	5
Total provision for income taxes in the Consolidated Statement of Changes in Equity	**(329)**	280	(326)
Total provision for income taxes	**$ 2,053**	$ 2,313	$ 1,704
Provision for income taxes in the Consolidated Statement of Income includes:			
Deferred tax expense (benefit) relating to origination/reversal of temporary differences	**$ 64**	$ 191	$ 372
Deferred tax expense (benefit) of tax rate changes	**(2)**	(2)	(4)
Deferred tax expense (benefit) of previously unrecognized tax losses, tax credits and temporary differences	**(65)**	(11)	(111)
	$ (3)	$ 178	$ 257

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(b) Reconciliation to statutory rate

Income taxes in the Consolidated Statement of Income vary from the amounts that would be computed by applying the composite federal and provincial statutory income tax rate for the following reasons:

	2018		2017		2016	
For the year ended October 31 ($ millions)	Amount	Percent of pre-tax income	Amount	Percent of pre-tax income	Amount	Percent of pre-tax income
Income taxes at Canadian statutory rate	**$ 2,943**	**26.5%**	$ 2,715	26.4%	$ 2,485	26.4%
Increase (decrease) in income taxes resulting from:						
Lower average tax rate applicable to subsidiaries and foreign branches	**(439)**	**(3.9)**	(286)	(2.8)	(234)	(2.5)
Tax-exempt income from securities	**(90)**	**(0.8)**	(407)	(3.9)	(220)	(2.3)
Deferred income tax effect of substantively enacted tax rate changes	**(2)**	**–**	(2)	–	(4)	–
Other, net	**(30)**	**(0.3)**	13	0.1	3	–
Total income taxes and effective tax rate	**$ 2,382**	**21.5%**	$ 2,033	19.8%	$ 2,030	21.6%

(c) Deferred taxes

Significant components of the Bank's deferred tax assets and liabilities are as follows:

	Statement of Income For the year ended		Statement of Financial Position As at	
October 31 ($ millions)	2018	2017	2018	2017
Deferred tax assets:				
Loss carryforwards	**$ 73**	$ 62	**$ 338**	$ 417
Allowance for credit losses	**(177)**	45	**877**	793
Deferred compensation	**41**	(25)	**178**	219
Deferred income	**(68)**	(124)	**476**	405
Property and equipment	**48**	(19)	**417**	133
Pension and other post-retirement benefits	**16**	(6)	**536**	720
Securities	**(17)**	(17)	**199**	169
Other	**(235)**	(169)	**633**	640
Total deferred tax assets	**$ (319)**	$ (253)	**$ 3,654**	$ 3,496
Deferred tax liabilities:				
Deferred income	**$ (22)**	$ (21)	**$ 156**	$ 133
Property and equipment	**(93)**	(32)	**137**	138
Pension and other post-retirement benefits	**(12)**	(9)	**110**	136
Securities	**(8)**	111	**166**	126
Intangible assets	**69**	(53)	**1,788**	1,094
Other	**(250)**	(427)	**564**	853
Total deferred tax liabilities	**$ (316)**	$ (431)	**$ 2,921**	$ 2,480
Net deferred tax assets (liabilities)(1)	**$ (3)**	$ 178	**$ 733**	$ 1,016

(1) For Consolidated Statement of Financial Position presentation, deferred tax assets and liabilities are assessed by legal entity. As a result, the net deferred tax assets of $733 (2017 – $1,016) are represented by deferred tax assets of $1,938 (2017 – $1,713), and deferred tax liabilities of $1,205 (2017 – $697) on the Consolidated Statement of Financial Position.

The major changes to net deferred taxes were as follows:

For the year ended October 31 ($ millions)	2018	2017
Balance at beginning of year	**$ 1,016**	$ 1,410
Deferred tax benefit (expense) for the year recorded in income	**3**	(178)
Deferred tax benefit (expense) for the year recorded in equity	**193**	(198)
Acquired in business combinations	**(493)**	–
Other	**14**	(18)
Balance at end of year	**$ 733**	$ 1,016

The tax related to temporary differences, unused tax losses and unused tax credits for which no deferred tax asset is recognized in the Consolidated Statement of Financial Position amounts to $14 million (October 31, 2017 – $82 million). The amount related to unrecognized losses is $7 million, which will expire as follows: $1 million in 2020 and beyond and $6 million in 2023.

Included in the net deferred tax asset are tax benefits of $92 million (2017 – $92 million) that have been recognized in certain Canadian and foreign subsidiaries that have incurred losses in either the current or the preceding year. In determining if it is appropriate to recognize these tax benefits, the Bank relied on projections of future taxable profits.

The amount of taxable temporary differences associated with investments in subsidiaries, associates and interests in joint ventures for which deferred tax liabilities have not been recognized at October 31, 2018 is approximately $33 billion (2017 – $27 billion).

Reassessment of dividend deductions

In November 2016, the Bank received a federal reassessment of $179 million for tax and interest as a result of the Canada Revenue Agency denying the tax deductibility of certain Canadian dividends received during the 2011 taxation year. In August 2017, the Bank received a reassessment of $185 million for tax and interest for the 2012 taxation year. The circumstances of the dividends subject to the reassessment are similar to those

prospectively addressed by recently enacted rules which had been introduced in the 2015 Canadian federal budget. In June 2018, the Bank received a reassessment of $211 million for tax and interest in respect of the same circumstances for the 2013 taxation year. The Bank is confident that its tax filing position was appropriate and in accordance with the relevant provisions of the Income Tax Act (Canada), and intends to vigorously defend its position.

28 Employee Benefits

The Bank sponsors a number of employee benefit plans, including pensions (defined benefit and defined contribution) and other benefit plans (post-retirement benefits and other long-term employee benefits) for most of its employees globally. The information presented below relates to the Bank's principal plans; other plans operated by certain subsidiaries of the Bank are not considered material and are not included in these disclosures.

Global pension plans

The principal pension plans include plans in Canada, the US, Mexico, the UK, Ireland, Jamaica, Trinidad & Tobago and other countries in the Caribbean in which the Bank operates. The Bank has a strong and well defined governance structure to manage these global obligations. The investment policy for each principal plan is reviewed periodically and all plans are in good standing with respect to legislation and local regulations.

Actuarial valuations for funding purposes for the Bank's funded pension plans are conducted as required by applicable legislation. The purpose of the actuarial valuation is to determine the funded status of the plans on a going-concern and statutory basis and to determine the required contributions. The plans are funded in accordance with applicable pension legislation and the Bank's funding policies such that future benefit promises based on plan provisions are well secured. The assumptions used for the funding valuations are set by independent plan actuaries on the basis of the requirements of the local actuarial standards of practice and statutes.

Scotiabank Pension Plan (Canada)

The most significant pension plan is the Scotiabank Pension Plan (SPP) in Canada, a defined benefit pension plan (which includes an optional defined contribution (DC) component for employees in Canada hired on or after January 1, 2016) which was recently amended to include a defined contribution pension plan for employees in Canada hired on or after May 1, 2018 (the defined benefit provision of the pension plan is closed to employees hired on or after May 1, 2018). As the administrator of the SPP, the Bank has established a well-defined governance structure and policies to maintain compliance with legislative and regulatory requirements under OSFI and the Canada Revenue Agency. The Bank appoints a number of committees to oversee and make decisions related to the administration of the SPP. Certain committees are also responsible for the investment of the assets of the SPP Fund and for monitoring the investment managers and performance.

- The Human Resources Committee (HRC) of the Board approves the charter of the Pension Administration and Investment Committee (PAIC), reviews reports, and approves the investment policy. The HRC also reviews and recommends any amendments to the SPP to the Board of Directors.
- PAIC is responsible for recommending the investment policy to the HRC, for appointing and monitoring investment managers, and for reviewing auditor and actuary reports. PAIC also monitors the administration of member pension benefits.
- The Scotiabank Master Trust Committee (MTC) invests assets in accordance with the investment policy and all applicable legislation. The MTC assigns specific mandates to investment managers. PAIC and the MTC both have independent member representation on the committees.
- The Capital Accumulation Plans (CAP) Committee is responsible for the administration and investment of the DC component of the SPP including the selection and monitoring of investment options available to DC participants.

Actuarial valuations for funding purposes for the SPP are conducted on an annual basis. The most recent funding valuation was conducted as of November 1, 2017. Contributions are being made to the SPP in accordance with this valuation and are shown in the table in b) below. The assumptions used for the funding valuation are set by independent plan actuaries on the basis of the requirements of the Canadian Institute of Actuaries and applicable regulation.

Other benefit plans

The principal other benefit plans include plans in Canada, the US, Mexico, Uruguay, the UK, Jamaica, Trinidad & Tobago, Colombia and other countries in the Caribbean in which the Bank operates. The most significant other benefit plans provided by the Bank are in Canada.

Key assumptions

The financial information reported below in respect of pension and other benefit plans is based on a number of assumptions. The most significant assumption is the discount rate used to determine the defined benefit obligation, which is set by reference to the yields on high quality corporate bonds that have durations that match the terms of the Bank's obligations. Separate discount rates are used to determine the annual benefit expense in Canada and the US. These rates are determined with reference to the yields on high quality corporate bonds with durations that match the various components of the annual benefit expense. The discount rate used to determine the annual benefit expense for all other plans continues to be the same as the rate used to determine the defined benefit obligation at the beginning of the period. Other assumptions set by management are determined in reference to market conditions, plan-level experience, best practices and future expectations. The key weighted-average assumptions used by the Bank for the measurement of the benefit obligation and benefit expense for all of the Bank's principal plans are summarized in the table in f) below.

Risk management

The Bank's defined benefit pension plans and other benefit plans expose the Bank to a number of risks. Some of the more significant risks include interest rate risk, investment risk, longevity risk and health care cost increases, among others. These risks could result in higher defined benefit expense and a higher defined benefit obligation to the extent that:

- there is a decline in discount rates; and/or
- plan assets returns are less than expected; and/or
- plan members live longer than expected; and/or
- health care costs are higher than assumed.

In addition to the governance structure and policies in place, the Bank manages risks by regularly monitoring market developments and asset investment performance. The Bank also monitors regulatory and legislative changes along with demographic trends and revisits the investment strategy and/or plan design as warranted.

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a) Relative size of plan obligations and assets

	Pension plans			Other benefit plans	
	Canada				
For the year ended October 31, 2018	SPP	Other	International	Canada	International
Percentage of total benefit obligations	**70%**	**14%**	**16%**	**58%**	**42%**
Percentage of total plan assets	**72%**	**9%**	**19%**	**16%**	**84%**
Percentage of total benefit expense[1]	**82%**	**16%**	**2%**	**39%**	**61%**

	Pension plans			Other benefit plans	
	Canada				
For the year ended October 31, 2017	SPP	Other	International	Canada	International
Percentage of total benefit obligations	74%	11%	15%	63%	37%
Percentage of total plan assets	76%	6%	18%	18%	82%
Percentage of total benefit expense[1]	80%	16%	4%	51%	49%

(1) Excludes non-routine benefit expense items such as past service costs, curtailment charges and settlement charges.

b) Cash contributions and payments

The table below shows the cash contributions and payments made by the Bank to its principal plans in 2018, and the two prior years.

Contributions to the principal plans for the year ended October 31 ($ millions)	2018	2017	2016
Defined benefit pension plans (cash contributions to fund the plans, including paying beneficiaries under the unfunded pension arrangements)			
SPP (excluding DC provision)	**$ 238**	$ 286	$ 187
All other plans	**78**	185	77
Other benefit plans (cash contributions mainly in the form of benefit payments to beneficiaries)	**61**	51	45
Defined contribution pension plans (cash contributions)	**41**	35	31
Total contributions[1]	**$ 418**	$ 557	$ 340

(1) Based on preliminary estimates, the Bank expects to make contributions of $238 to the SPP (excluding the DC provision), $51 to all other defined benefit pension plans, $65 to other benefit plans and $63 to all other defined contribution plans for the year ending October 31, 2019.

c) Funded and unfunded plans

The excess (deficit) of the fair value of assets over the benefit obligation at the end of the year includes the following amounts for plans that are wholly unfunded and plans that are wholly or partly funded.

	Pension plans			Other benefit plans		
As at October 31 ($ millions)	2018	2017	2016	2018	2017	2016
Benefit obligation						
Benefit obligation of plans that are wholly unfunded	**$ 400**	$ 418	$ 408	**$ 1,101**	$ 1,324	$ 1,310
Benefit obligation of plans that are wholly or partly funded	**7,868**	8,424	8,731	**273**	334	372
Funded status						
Benefit obligation of plans that are wholly or partly funded	**$ 7,868**	$ 8,424	$ 8,731	**$ 273**	$ 334	$ 372
Fair value of assets	**8,037**	8,329	7,770	**240**	266	284
Excess (deficit) of fair value of assets over benefit obligation of wholly or partly funded plans	**$ 169**	$ (95)	$ (961)	**$ (33)**	$ (68)	$ (88)
Benefit obligation of plans that are wholly unfunded	**400**	418	408	**1,101**	1,324	1,310
Excess (deficit) of fair value of assets over total benefit obligation	**$ (231)**	$ (513)	$ (1,369)	**$ (1,134)**	$ (1,392)	$ (1,398)
Effect of asset limitation and minimum funding requirement	**(2)**	(39)	(60)	**–**	–	–
Net asset (liability) at end of year	**$ (233)**	$ (552)	$ (1,429)	**$ (1,134)**	$ (1,392)	$ (1,398)

d) Financial information

The following tables present financial information related to the Bank's principal plans.

For the year ended October 31 ($ millions)	Pension plans 2018	Pension plans 2017	Pension plans 2016	Other benefit plans 2018	Other benefit plans 2017	Other benefit plans 2016
Change in benefit obligation						
Benefit obligation at beginning of year	**$ 8,842**	$ 9,139	$ 8,113	**$ 1,658**	$ 1,682	$ 1,639
Current service cost	**334**	330	284	**30**	39	39
Interest cost on benefit obligation	**309**	297	314	**70**	72	77
Employee contributions	**22**	24	24	**–**	–	–
Benefits paid	**(1,012)**	(724)	(593)	**(90)**	(76)	(71)
Actuarial loss (gain)	**(495)**	(46)	1,119	**(96)**	(36)	95
Past service cost	**5**	–	(16)	**(196)[2]**	4	(77)
Business acquisition	**264**	–	–	**6**	1	9
Settlements	**(2)**	(157)	–	**–**	–	–
Foreign exchange	**1**	(21)	(106)	**(8)**	(28)	(29)
Benefit obligation at end of year	**$ 8,268**	$ 8,842	$ 9,139	**$ 1,374**	$ 1,658	$ 1,682
Change in fair value of assets						
Fair value of assets at beginning of year	**8,329**	7,770	7,615	**266**	284	307
Interest income on fair value of assets	**305**	273	310	**20**	19	22
Return on plan assets in excess of (less than) interest income on fair value of assets	**(166)**	700	275	**(11)**	1	5
Employer contributions	**316**	471	264	**61**	51	45
Employee contributions	**22**	24	24	**–**	–	–
Benefits paid	**(1,012)**	(724)	(593)	**(90)**	(76)	(71)
Administrative expenses	**(14)**	(13)	(12)	**–**	–	–
Business acquisition	**251**	–	–	**–**	–	2
Settlements	**(2)**	(157)	–	**–**	(1)	–
Foreign exchange	**8**	(15)	(113)	**(6)**	(12)	(26)
Fair value of assets at end of year	**$ 8,037**	$ 8,329	$ 7,770	**$ 240**	$ 266	$ 284
Funded status						
Excess (deficit) of fair value of assets over benefit obligation at end of year	**(231)**	(513)	(1,369)	**(1,134)**	(1,392)	(1,398)
Effect of asset limitation and minimum funding requirement[1]	**(2)**	(39)	(60)	**–**	–	–
Net asset (liability) at end of year	**$ (233)**	$ (552)	$ (1,429)	**$ (1,134)**	$ (1,392)	$ (1,398)
Recorded in:						
Other assets in the Bank's Consolidated Statement of Financial Position	**360**	256	184	**–**	1	–
Other liabilities in the Bank's Consolidated Statement of Financial Position	**(593)**	(808)	(1,613)	**(1,134)**	(1,393)	(1,398)
Net asset (liability) at end of year	**$ (233)**	$ (552)	$ (1,429)	**$ (1,134)**	$ (1,392)	$ (1,398)
Annual benefit expense						
Current service cost	**334**	330	284	**30**	39	39
Net interest expense (income)	**7**	29	9	**50**	53	55
Administrative expenses	**12**	11	13	**–**	–	–
Past service costs	**5**	–	(16)	**(196)[2]**	4	(77)
Amount of settlement (gain) loss recognized	**–**	–	–	**–**	–	–
Remeasurement of other long-term benefits	**–**	–	–	**(10)**	(3)	(20)
Benefit expense (income) recorded in the Consolidated Statement of Income	**$ 358**	$ 370	$ 290	**$ (126)**	$ 93	$ (3)
Defined contribution benefit expense	**$ 41**	$ 35	$ 31	**$ –**	$ –	$ –
Remeasurements						
(Return) on plan assets in excess of interest income on fair value of assets	**166**	(700)	(275)	**11**	1	(3)
Actuarial loss (gain) on benefit obligation	**(495)**	(46)	1,119	**(86)**	(35)	113
Change in the asset limitation	**(40)**	(25)	18	**–**	–	–
Remeasurements recorded in OCI	**$ (369)**	$ (771)	$ 862	**$ (75)**	$ (34)	$ 110
Total benefit cost	**$ 30**	$ (366)	$ 1,183	**$ (201)**	$ 59	$ 107
Additional details on actual return on assets and actuarial (gains) and losses						
Actual return on assets (net of administrative expenses)	**$ 125**	$ 960	$ 573	**$ 9**	$ 20	$ 27
Actuarial (gains) and losses from changes in demographic assumptions	**(148)**	(6)	9	**(23)**	–	(5)
Actuarial (gains) and losses from changes in financial assumptions	**(548)**	(71)	1,116	**(92)**	(13)	133
Actuarial (gains) and losses from changes in experience	**201**	31	(6)	**19**	(23)	(33)
Additional details on fair value of pension plan assets invested						
In Scotiabank securities (stock, bonds)	**377**	457	410	**3**	4	–
In property occupied by Scotiabank	**4**	4	5	**–**	–	–
Change in asset ceiling/onerous liability						
Asset ceiling /onerous liability at end of prior year	**39**	60	41	**–**	–	–
Interest expense	**3**	5	5	**–**	–	–
Remeasurements	**(40)**	(25)	18	**–**	–	–
Foreign exchange	**–**	(1)	(4)	**–**	–	–
Asset ceiling /onerous liability at end of year	**$ 2**	$ 39	$ 60	**$ –**	$ –	$ –

(1) The recognized asset is limited by the present value of economic benefits available from a reduction in future contributions to a plan and from the ability to pay plan expenses from the fund.
(2) The past service cost for other benefit plans includes a decrease of $203 million in the first quarter of fiscal 2018, related to modifications to the Bank's postretirement benefits plan.

e) Maturity profile of the defined benefit obligation

The weighted average duration of the total benefit obligation at October 31, 2018 is 14.4 years (2017 – 15.3 years, 2016 – 15.3 years).

	Pension plans			Other benefit plans		
For the year ended October 31	**2018**	2017	2016	**2018**	2017	2016
Disaggregation of the benefit obligation (%)						
Canada						
Active members	**57%**	58%	60%	**9%**	29%	33%
Inactive and retired members	**43%**	42%	40%	**91%**	71%	67%
Total	**100%**	100%	100%	**100%**	100%	100%
Mexico						
Active members	**26%**	27%	29%	**54%**	55%	57%
Inactive and retired members	**74%**	73%	71%	**46%**	45%	43%
Total	**100%**	100%	100%	**100%**	100%	100%
United States						
Active members	**45%**	48%	33%	**34%**	35%	38%
Inactive and retired members	**55%**	52%	67%	**66%**	65%	62%
Total	**100%**	100%	100%	**100%**	100%	100%

f) Key assumptions (%)

The key weighted-average assumptions used by the Bank for the measurement of the benefit obligation and benefit expense for all of the Bank's principal plans are summarized as follows:

	Pension plans			Other benefit plans		
For the year ended October 31	**2018**	2017	2016	**2018**	2017	2016
Benefit obligation at end of year						
Discount rate – all plans	**4.35%**	3.90%	3.86%	**5.54%**	4.86%	4.74%
Discount rate – Canadian plans only	**4.10%**	3.60%	3.60%	**3.96%**	3.53%	3.42%
Rate of increase in future compensation(1)	**2.80%**	2.76%	2.72%	**3.83%**	4.07%	4.09%
Benefit expense (income) for the year						
Discount rate – All plans						
Discount rate for defined benefit obligations	**3.90%**	3.86%	4.64%	**4.86%**	4.74%	5.33%
Discount rate for net interest cost	**3.55%**	3.33%	4.03%	**4.60%**	4.42%	4.91%
Discount rate for service cost	**4.04%**	4.01%	4.83%	**5.11%**	5.09%	5.62%
Discount rate for interest on service cost	**3.77%**	3.64%	4.31%	**5.04%**	4.94%	5.56%
Discount rate – Canadian plans only						
Discount rate for defined benefit obligations	**3.60%**	3.60%	4.40%	**3.53%**	3.42%	4.27%
Discount rate for net interest cost	**3.20%**	3.00%	3.70%	**3.18%**	2.98%	3.67%
Discount rate for service cost	**3.70%**	3.70%	4.60%	**3.76%**	3.75%	4.54%
Discount rate for interest on service cost	**3.40%**	3.30%	4.00%	**3.66%**	3.56%	4.44%
Rate of increase in future compensation(1)	**2.76%**	2.72%	2.75%	**4.07%**	4.09%	4.41%
Health care cost trend rates at end of year						
Initial rate	**n/a**	n/a	n/a	**5.81%**	5.99%	6.12%
Ultimate rate	**n/a**	n/a	n/a	**4.66%**	4.93%	4.93%
Year ultimate rate reached	**n/a**	n/a	n/a	**2040**	2030	2030
Assumed life expectancy in Canada (years)						
Life expectancy at 65 for current pensioners – male	**23.3**	23.2	23.2	**23.3**	23.2	23.2
Life expectancy at 65 for current pensioners – female	**24.4**	24.4	24.3	**24.4**	24.4	24.3
Life expectancy at 65, for future pensioners currently aged 45 – male	**24.3**	24.2	24.2	**24.3**	24.2	24.2
Life expectancy at 65, for future pensioners currently aged 45 – female	**25.3**	25.3	25.3	**25.3**	25.3	25.3
Assumed life expectancy in Mexico (years)						
Life expectancy at 65 for current pensioners – male	**21.3**	21.3	21.3	**21.3**	21.3	21.3
Life expectancy at 65 for current pensioners – female	**23.8**	23.8	23.8	**23.8**	23.8	23.8
Life expectancy at 65, for future pensioners currently aged 45 – male	**21.7**	21.7	21.7	**21.7**	21.7	21.7
Life expectancy at 65, for future pensioners currently aged 45 – female	**24.0**	24.0	24.0	**24.0**	24.0	24.0
Assumed life expectancy in United States (years)						
Life expectancy at 65 for current pensioners – male	**22.7**	22.7	23.0	**22.7**	22.7	23.0
Life expectancy at 65 for current pensioners – female	**24.4**	24.4	24.7	**24.4**	24.4	24.7
Life expectancy at 65, for future pensioners currently aged 45 – male	**24.3**	24.3	23.7	**24.3**	24.3	23.7
Life expectancy at 65, for future pensioners currently aged 45 – female	**25.9**	25.9	25.6	**25.9**	25.9	25.6

(1) The weighted-average rates of increase in future compensation shown for other benefit plans do not include Canadian flexible post-retirement benefits plans established in fiscal 2005, as they are not impacted by future compensation increases.

g) Sensitivity analysis

The sensitivity analysis presented represents the impact of a change in a single assumption with other assumptions left unchanged. For purposes of the sensitivity analysis, the present value of the defined benefit obligation has been calculated using the projected unit credit method at the end of the reporting period, which is the same as that applied in calculating the defined benefit obligation recognized in the statement of financial position.

	Pension plans		Other benefit plans	
For the year ended October 31, 2018 ($ millions)	Benefit obligation	Benefit expense	Benefit obligation	Benefit expense
Impact of the following changes:				
1% decrease in discount rate	**$ 1,383**	**$ 122**	**$ 189**	**$ 13**
0.25% increase in rate of increase in future compensation	**78**	**9**	**1**	**–**
1% increase in health care cost trend rate	**n/a**	**n/a**	**132**	**16**
1% decrease in health care cost trend rate	**n/a**	**n/a**	**(106)**	**(12)**
1 year increase in Canadian life expectancy	**151**	**10**	**20**	**1**
1 year increase in Mexican life expectancy	**2**	**–**	**2**	**–**
1 year increase in the United States life expectancy	**4**	**–**	**4**	**–**

h) Assets

The Bank's principal pension plans' assets are generally invested with the long-term objective of maximizing overall expected returns, at an acceptable level of risk relative to the benefit obligation. A key factor in managing long-term investment risk is asset mix. Investing the pension assets in different asset classes and geographic regions helps to mitigate risk and to minimize the impact of declines in any single asset class, particular region or type of investment. Investment managers – including related-party managers – are typically hired and assigned specific mandates within each asset class.

Pension plan asset mix guidelines are set for the long term, and are documented in each plan's investment policy. Asset mix policy typically also reflects the nature of the plan's benefit obligations. Legislation places certain restrictions on asset mix – for example, there are usually limits on concentration in any one investment. Other concentration and quality limits are also set forth in the investment policies. The use of derivatives is generally prohibited without specific authorization; currently, the main use of derivatives is for currency hedging. Asset mix guidelines are reviewed at least once each year, and adjusted, where appropriate, based on market conditions and opportunities. However, large asset class shifts are not common, and typically reflect a change in the pension plan's situation (e.g. plan amendments) and/or in the investment strategy. Actual asset mix is reviewed regularly, and rebalancing back to target asset mix is considered – as needed – generally on a semi-annual basis. The Bank's other benefit plans are generally not funded, with the exception of certain programs in Canada and Mexico.

The tables below shows the weighted-average actual and target asset allocations for the Bank's principal plans at October 31, by asset category.

	Pension plans			Other benefit plans		
Asset category %	Actual **2018**	Actual 2017	Actual 2016	Actual **2018**	Actual 2017	Actual 2016
Cash and cash equivalents	**4%**	2%	2%	**1%**	1%	2%
Equity investments						
Quoted in an active market	**36%**	43%	44%	**42%**	46%	45%
Non quoted	**12%**	16%	16%	**2%**	–%	–%
	48%	59%	60%	**44%**	46%	45%
Fixed income investments						
Quoted in an active market	**9%**	5%	4%	**34%**	32%	29%
Non quoted	**29%**	26%	27%	**21%**	21%	24%
	38%	31%	31%	**55%**	53%	53%
Property						
Quoted in an active market	**–%**	–%	–%	**–%**	–%	–%
Non quoted	**1%**	–%	–%	**–%**	–%	–%
	1%	–%	–%	**–%**	–%	–%
Other						
Quoted in an active market	**–%**	–%	1%	**–%**	–%	–%
Non quoted	**9%**	8%	6%	**–%**	–%	–%
	9%	8%	7%	**–%**	–%	–%
Total	**100%**	100%	100%	**100%**	100%	100%

Target asset allocation at October 31, 2018 Asset category %	Pension plans	Other benefit plans
Cash and cash equivalents	**–%**	**2%**
Equity investments	**48%**	**45%**
Fixed income investments	**42%**	**53%**
Property	**2%**	**–%**
Other	**8%**	**–%**
Total	**100%**	**100%**

29 Operating Segments

Scotiabank is a diversified financial services institution that provides a wide range of financial products and services to retail, commercial and corporate customers around the world. The Bank's businesses are grouped into three business lines: Canadian Banking, International Banking and Global Banking and Markets. Other smaller business segments are included in the Other segment. The results of these business segments are based upon the internal financial reporting systems of the Bank. The accounting policies used in these segments are generally consistent with those followed in the preparation of the consolidated financial statements as disclosed in Note 3. Notable accounting measurement differences are:

- tax normalization adjustments related to the gross-up of income from associated corporations. This adjustment normalizes the effective tax rate in the divisions to better present the contribution of the associated companies to the divisional results.
- the grossing up of tax-exempt net interest income and non-interest income to an equivalent before-tax basis for those affected segments.

These differences in measurement enable comparison of net interest income and non-interest income arising from taxable and tax-exempt sources.

Scotiabank's results, and average assets and liabilities, allocated by these operating segments, are as follows:

For the year ended October 31, 2018(1)

Taxable equivalent basis ($ millions)	Canadian Banking	International Banking	Global Banking and Markets	Other(2)	Total
Net interest income(3)	$ 7,898	$ 7,322	$ 1,454	$ (483)	$ 16,191
Non-interest income(4)	5,452	4,111	3,074	(53)	12,584
Total revenues	13,350	11,433	4,528	(536)	28,775
Provision for credit losses	794	1,867	(50)	–	2,611
Depreciation and amortization	460	304	69	15	848
Non-interest expenses	6,194	5,807	2,164	45	14,210
Income tax expense	1,538	706	587	(449)	2,382
Net income	$ 4,364	$ 2,749	$ 1,758	$ (147)	$ 8,724
Net income attributable to non-controlling interests in subsidiaries	–	176	–	–	176
Net income attributable to equity holders of the Bank	4,364	2,573	1,758	(147)	8,548
Average assets ($ billions)	342	168	321	115	946
Average liabilities ($ billions)	254	131	265	232	882

(1) The amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Notes 3 and 4).
(2) Includes all other smaller operating segments and corporate adjustments, such as the elimination of the tax-exempt income gross-up reported in net interest income and non-interest income and provision for income taxes for the year ended October 31, 2018 amounting to $112 to arrive at the amounts reported in the Consolidated Statement of Income, differences in the actual amount of costs incurred and charged to the operating segments.
(3) Interest income is reported net of interest expense as management relies primarily on net interest income as a performance measure.
(4) Includes net income from investments in associated corporations for Canadian Banking – $93; International Banking – $643 and Other – $(177).

For the year ended October 31, 2017

Taxable equivalent basis ($ millions)	Canadian Banking	International Banking	Global Banking and Markets	Other(1)	Total
Net interest income(2)	$ 7,363	$ 6,726	$ 1,336	$ (390)	$ 15,035
Non-interest income(3)	5,488	3,688	3,288	(344)	12,120
Total revenues	12,851	10,414	4,624	(734)	27,155
Provision for credit losses	913	1,294	42	–	2,249
Depreciation and amortization	412	283	55	11	761
Non-interest expenses	6,075	5,381	2,105	308	13,869
Income tax expense	1,387	828	604	(786)	2,033
Net income	$ 4,064	$ 2,628	$ 1,818	$ (267)	$ 8,243
Net income attributable to non-controlling interests in subsidiaries	–	238	–	–	238
Net income attributable to equity holders of the Bank	4,064	2,390	1,818	(267)	8,005
Average assets ($ billions)	323	148	336	106	913
Average liabilities ($ billions)	244	115	267	228	854

(1) Includes all other smaller operating segments and corporate adjustments, such as the elimination of the tax-exempt income gross-up reported in net interest income and non-interest income and provision for income taxes for the year ended October 31, 2017 amounting to $562 to arrive at the amounts reported in the Consolidated Statement of Income, differences in the actual amount of costs incurred and charged to the operating segments.
(2) Interest income is reported net of interest expense as management relies primarily on net interest income as a performance measure.
(3) Includes net income from investments in associated corporations for Canadian Banking – $66; International Banking – $482 and Other – $(141).

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For the year ended October 31, 2016

Taxable equivalent basis ($ millions)	Canadian Banking	International Banking	Global Banking and Markets	Other(1)	Total
Net interest income(2)	$ 7,024	$ 6,359	$ 1,293	$ (384)	$ 14,292
Non-interest income(3)	5,164	3,482	3,139	273	12,058
Total revenues	12,188	9,841	4,432	(111)	26,350
Provision for credit losses	832	1,281	249	50	2,412
Depreciation and amortization	340	265	68	11	684
Non-interest expenses	5,984	5,258	1,972	642	13,856
Income tax expense	1,296	707	572	(545)	2,030
Net income	$ 3,736	$ 2,330	$ 1,571	$ (269)	$ 7,368
Net income attributable to non-controlling interests in subsidiaries	–	251	–	–	251
Net income attributable to equity holders of the Bank	3,736	2,079	1,571	(269)	7,117
Average assets ($ billions)	309	143	351	111	914
Average liabilities ($ billions)	232	109	270	247	858

(1) Includes all other smaller operating segments and corporate adjustments, such as the elimination of the tax-exempt income gross-up reported in net interest income and non-interest income and provision for income taxes for the year ended October 31, 2016 amounting to $299 to arrive at the amounts reported in the Consolidated Statement of Income, differences in the actual amount of costs incurred and charged to the operating segments.
(2) Interest income is reported net of interest expense as management relies primarily on net interest income as a performance measure.
(3) Includes net income from investments in associated corporations for Canadian Banking – $78; International Banking – $473 and Other – $(137).

Geographical segmentation

The following table summarizes the Bank's financial results by geographic region. Revenues and expenses which have not been allocated back to specific operating business lines are reflected in corporate adjustments.

For the year ended October 31, 2018 ($ millions)(1)(2)	Canada	United States	Mexico	Peru	Chile	Colombia	Other International	Total
Net interest income	$ 7,823	$ 691	$ 1,561	$ 1,378	$ 1,117	$ 839	$ 2,825	$ 16,234
Non-interest income(2)	7,040	843	613	662	565	484	2,612	12,819
Total revenues(3)	14,863	1,534	2,174	2,040	1,682	1,323	5,437	29,053
Provision for credit losses	802	(34)	239	351	498	511	244	2,611
Non-interest expenses	7,591	701	1,196	770	837	723	3,148	14,966
Income tax expense	1,596	220	76	235	51	39	451	2,668
Subtotal	4,874	647	663	684	296	50	1,594	8,808
Net income attributable to non-controlling interests in subsidiaries	–	–	17	12	28	16	103	176
Total	$ 4,874	$ 647	$ 646	$ 672	$ 268	$ 34	$ 1,491	$ 8,632
Corporate adjustments								(84)
Net income attributable to equity holders of the Bank								$ 8,548
Total average assets ($ billions)	$ 548	$ 119	$ 32	$ 24	$ 33	$ 12	$ 161	$ 929
Corporate adjustments								17
Total average assets, including corporate adjustments								$ 946

(1) The amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Notes 3 and 4).
(2) Includes net income from investments in associated corporations for Canada – $93; Peru – $9 and Other International – $634.
(3) Revenues are attributed to countries based on where services are performed or assets are recorded.

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For the year ended October 31, 2017 ($ millions)	Canada	United States	Mexico	Peru	Chile	Colombia	Other International	Total
Net interest income	$ 7,440	$ 460	$ 1,380	$ 1,287	$ 817	$ 710	$ 2,999	$ 15,093
Non-interest income[1]	6,924	830	536	635	409	455	2,502	12,291
Total revenues[2]	14,364	1,290	1,916	1,922	1,226	1,165	5,501	27,384
Provision for credit losses	906	(14)	193	329	145	337	353	2,249
Non-interest expenses	7,650	606	1,123	762	630	620	3,069	14,460
Income tax expense	1,066	147	125	225	77	71	506	2,217
Subtotal	4,742	551	475	606	374	137	1,573	8,458
Net income attributable to non-controlling interests in subsidiaries	–	–	12	11	53	60	102	238
Total	$ 4,742	$ 551	$ 463	$ 595	$ 321	$ 77	$ 1,471	$ 8,220
Corporate adjustments								(215)
Net income attributable to equity holders of the Bank								$ 8,005
Total average assets ($ billions)	$ 539	$ 111	$ 28	$ 24	$ 23	$ 11	$ 162	$ 898
Corporate adjustments								15
Total average assets, including corporate adjustments								$ 913

(1) Includes net income from investments in associated corporations for Canada – $66; Peru – $6 and Other International – $476.
(2) Revenues are attributed to countries based on where services are performed or assets are recorded.

For the year ended October 31, 2016 ($ millions)	Canada	United States	Mexico	Peru	Chile	Colombia	Other International	Total
Net interest income	$ 7,022	$ 479	$ 1,224	$ 1,231	$ 763	$ 674	$ 2,950	$ 14,343
Non-interest income[1]	6,893	871	554	600	325	419	2,409	12,071
Total revenues[2]	13,915	1,350	1,778	1,831	1,088	1,093	5,359	26,414
Provision for credit losses	876	112	225	315	113	320	401	2,362
Non-interest expenses	7,339	633	1,121	740	605	550	3,036	14,024
Income tax expense	1,235	155	69	201	45	89	497	2,291
Subtotal	4,465	450	363	575	325	134	1,425	7,737
Net income attributable to non-controlling interests in subsidiaries	–	–	9	12	38	93	99	251
Total	$ 4,465	$ 450	$ 354	$ 563	$ 287	$ 41	$ 1,326	$ 7,486
Corporate adjustments								(369)
Net income attributable to equity holders of the Bank								$ 7,117
Total average assets ($ billions)	$ 529	$ 126	$ 27	$ 23	$ 20	$ 10	$ 165	$ 900
Corporate adjustments								14
Total average assets, including corporate adjustments								$ 914

(1) Includes net income from investments in associated corporations for Canada – $78; Peru – $5 and Other International – $468.
(2) Revenues are attributed to countries based on where services are performed or assets are recorded.

30 Related Party Transactions

Compensation of key management personnel of the Bank

Key management personnel are those persons having authority and responsibility for planning, directing and controlling the activities of the Bank, directly or indirectly, and comprise the directors of the Bank, the President and Chief Executive Officer, certain direct reports of the President and Chief Executive Officer and Group Heads.

For the year ended October 31 ($ millions)	2018	2017
Salaries and cash incentives[1]	**$ 18**	$ 17
Equity-based payment[2]	**27**	25
Pension and other benefits[1]	**4**	3
Total	**$ 49**	$ 45

(1) Expensed during the year.
(2) Awarded during the year.

Directors can use some or all of their director fees earned to buy common shares of the Bank at market rates through the Director's Share Purchase Plan.Non-officer directors may elect to receive all or a portion of their fees in the form of deferred stock units which vest immediately. Refer to Note 26 for further details of these plans.

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Loans and deposits of key management personnel

As at October 31 ($ millions)	2018	2017
Loans	**$ 13**	$ 6
Deposits	**$ 6**	$ 8

The Bank's committed credit exposure to companies controlled by directors totaled $132.4 million as at October 31, 2018 (2017 – $145.2 million), while actual utilized amounts were $23.9 million (2017 – $11.5 million).

Transactions with associates and joint ventures

In the ordinary course of business, the Bank provides normal banking services and enters into transactions with its associated and other related corporations on terms similar to those offered to non-related parties. If these transactions are eliminated on consolidation, they are not disclosed as related party transactions. Transactions between the Bank and its associated companies and joint ventures also qualify as related party transactions and were recorded as follows:

As at and for the year ended October 31 ($ millions)	2018	2017	2016
Net income / (loss)	**$ (64)**	$ (46)	$ (45)
Loans	**702**	703	788
Deposits	**151**	217	338
Guarantees and commitments	**123**	114	99

Scotiabank principal pension plan

The Bank manages assets of $3.8 billion (2017 – $3.0 billion) which is a portion of the Scotiabank principal pension plan assets and earned $5.0 million (2017 – $3.7 million) in fees.

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31 Principal Subsidiaries and Non-Controlling Interests in Subsidiaries

(a) Principal subsidiaries(1)

The following table presents the major operating subsidiaries the Bank owns, directly or indirectly. All of these subsidiaries are included in the Bank's consolidated financial statements.

As at October 31 ($ millions)	Principal office	Carrying value of shares 2018	2017
Canadian			
1832 Asset Management L.P.	Toronto, Ontario	**$ 1,524**	$ 2,006
BNS Investments Inc.	Toronto, Ontario	**13,870**	13,551
Montreal Trust Company of Canada	Montreal, Quebec		
National Trust Company(2)	Stratford, Ontario	**415**	449
Roynat Inc.	Calgary, Alberta	**432**	239
Scotia Capital Inc.	Toronto, Ontario	**1,391**	1,024
Scotia Dealer Advantage Inc.	Burnaby, British Columbia	**592**	567
Scotia Life Insurance Company	Toronto, Ontario	**219**	189
Scotia Mortgage Corporation	Toronto, Ontario	**588**	615
Scotia Securities Inc.	Toronto, Ontario	**40**	34
Tangerine Bank	Toronto, Ontario	**3,525**	3,488
Jarislowsky, Fraser Limited	Montreal, Quebec	**947**	–
MD Financial Management Inc.	Ottawa, Ontario	**2,612**	–
International			
Scotiabank Colpatria S.A. (formerly Banco Colpatria Multibanca Colpatria S.A.) (51%)(3)	Bogota, Colombia	**1,221**	1,160
The Bank of Nova Scotia Berhad	Kuala Lumpur, Malaysia	**318**	303
The Bank of Nova Scotia International Limited	Nassau, Bahamas	**19,312**	18,223
BNS Asia Limited	Singapore		
The Bank of Nova Scotia Trust Company (Bahamas) Limited	Nassau, Bahamas		
Grupo BNS de Costa Rica, S.A.	San Jose, Costa Rica		
Scotiabank & Trust (Cayman) Ltd.	Grand Cayman, Cayman Islands		
Scotiabank (Bahamas) Limited	Nassau, Bahamas		
Scotiabank (British Virgin Islands) Limited	Road Town, Tortola, B.V.I.		
Scotiabank (Hong Kong) Limited	Hong Kong, China		
Scotiabank (Ireland) Designated Activity Company	Dublin, Ireland		
Scotiabank (Turks and Caicos) Ltd.	Providenciales, Turks and Caicos Islands		
BNS International (Panama) S.A.	Panama City, Panama		
Grupo Financiero Scotiabank Inverlat, S.A. de C.V. (97.4%)	Mexico City, Mexico	**3,901**	3,544
Nova Scotia Inversiones Limitada	Santiago, Chile	**5,100**	3,325
Scotiabank Chile S.A. (75.5%)	Santiago, Chile		
Scotia Holdings (US) Inc.(4)	New York, New York		
Scotiabanc Inc.	Houston, Texas		
Scotia Capital (USA) Inc.(4)(5)	New York, New York		
Scotia International Limited	Nassau, Bahamas	**635**	642
Scotiabank Anguilla Limited	The Valley, Anguilla		
Scotiabank Brasil S.A. Banco Multiplo	Sao Paulo, Brazil	**386**	223
Scotiabank Caribbean Holdings Ltd.	Bridgetown, Barbados	**1,847**	1,710
Scotia Group Jamaica Limited (71.8%)	Kingston, Jamaica		
The Bank of Nova Scotia Jamaica Limited	Kingston, Jamaica		
Scotia Investments Jamaica Limited	Kingston, Jamaica		
Scotiabank (Belize) Ltd.	Belize City, Belize		
Scotiabank Trinidad and Tobago Limited (50.9%)	Port of Spain, Trinidad and Tobago		
Scotiabank (Panama) S.A.	Panama City, Panama		
Scotiabank Uruguay S.A.	Montevideo, Uruguay	**490**	496
Scotiabank de Puerto Rico	San Juan, Puerto Rico	**1,555**	1,395
Scotiabank El Salvador, S.A. (99.6%)	San Salvador, El Salvador	**686**	659
Scotiabank Europe plc	London, United Kingdom	**2,432**	2,400
Scotiabank Peru S.A.A. (98.05%)	Lima, Peru	**4,877**	4,518

(1) The Bank (or immediate parent of an entity) owns 100% of the outstanding voting shares of each subsidiary unless otherwise noted.
(2) Effective October 29, 2018, National Trustco Inc. was dissolved and National Trust Company is held by the Bank.
(3) Effective June 15, 2018, the name was changed to Scotiabank Colpatria S.A.
(4) The carrying value of this subsidiary is included with that of its parent, BNS Investments Inc.
(5) The carrying value of this subsidiary is included with that of its parent, Scotia Holdings (US) Inc.

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Subsidiaries may have a different reporting date from that of the Bank of October 31. Dates may differ for a variety of reasons including local reporting requirements or tax laws. In accordance with our accounting policies, for the purpose of inclusion in the consolidated financial statements of the Bank, adjustments are made where significant for subsidiaries with different reporting dates.

(b) Non-controlling interests in subsidiaries

The Bank's significant non-controlling interests in subsidiaries are comprised of the following entities:

	As at and for the year ended				
	2018			2017	
	Non-controlling interest %	Non-controlling interests in subsidiaries	Dividends paid to non-controlling interest	Non-controlling interests in subsidiaries	Dividends paid to non-controlling interest
Scotiabank Chile S.A.[1]	**24.5%**	**$ 917**	**$ 115**	$ 191	$ 14
Scotiabank Colpatria S.A. (formerly Banco Colpatria Multibanca Colpatria S.A.) (51%)[2]	**49.0%**	**519**	**–**	445	38
Scotia Group Jamaica Limited	**28.2%**	**340**	**17**	300	17
Scotiabank Trinidad and Tobago Limited	**49.1%**	**365**	**49**	354	56
Other	**0.1% - 49.0%[3]**	**311**	**18**	302	8
Total		**$ 2,452**	**$ 199**	$ 1,592	$ 133

(1) Non-controlling interest holders for Scotiabank Chile S.A. have a right to sell their holding to the Bank at fair market value that can be settled at the Bank's discretion, by issuance of common shares or cash.
(2) Non-controlling interest holders for Scotiabank Colpatria S.A. have a right to sell their holding to the Bank after the end of 7th anniversary (January 17, 2019) and at subsequent pre-agreed intervals, into the future, at fair market value that can be settled at the Bank's discretion, by issuance of common shares or cash.
(3) Range of non-controlling interest % for other subsidiaries.

Summarized financial information of the Bank's subsidiaries with significant non-controlling interests are as follows:

	As at and for the year ended October 31, 2018				As at and for the year ended October 31, 2017			
($ millions)	Revenue	Total comprehensive income	Total assets	Total liabilities	Revenue	Total comprehensive income	Total assets	Total liabilities
Total	**$ 3,615**	**$ 173**	**$ 80,352**	**$ 73,449**	$ 2,978	$ 567	$ 49,077	$ 42,943

32 Interest Income and Expense

The following table presents details of interest income from financial assets.

For the year ended October 31 ($ millions)	2018
Loans at amortized cost[1]	**$ 24,991**
Securities	
Amortized cost[1]	**353**
FVOCI[1]	**1,205**
Other	**213**
Securities purchased under resale agreements and securities borrowed not at FVTPL[1]	**446**
Deposit with financial institutions[1]	**859**
Interest income	**$ 28,067**

(1) The interest income on the financial assets measured at amortized cost and FVOCI is calculated using the effective interest method.

The following table presents details of interest expense from financial liabilities.

For the year ended October 31 ($ millions)	2018
Deposits	
Amortized cost[1]	**$ 10,460**
FVTPL	**84**
Subordinated debentures[1]	**214**
Other	
Amortized cost[1]	**1,084**
FVTPL	**34**
Interest expense	**$ 11,876**

(1) The interest expense on the financial liabilities measured at amortized cost is calculated using the effective interest method.

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33 Non-Interest Income

The following table presents details of banking revenues and wealth management revenues in non-interest income.

For the year ended October 31 ($ millions)	2018	2017	2016
Banking			
Card revenues	**$ 1,656**	$ 1,514	$ 1,359
Deposit and payment services	**1,366**	1,324	1,279
Credit fees	**1,191**	1,153	1,154
Other	**466**	472	436
	4,679	4,463	4,228
Banking fee related expenses	**678**	608	559
Total banking	**$ 4,001**	$ 3,855	$ 3,669
Wealth management			
Mutual funds	**$ 1,714**	$ 1,639	$ 1,624
Brokerage fees(1)	**895**	1,047	1,034
Investment management and trust(1)	**732**	632	624
Total wealth management	**$ 3,341**	$ 3,318	$ 3,282

(1) Prior period amounts have been reclassified to conform with current period presentation.

34 Trading Revenues

The following table presents details of trading revenues.

For the year ended October 31 ($ millions)	2018	2017(1)	2016(1)
Interest rate and credit	**$ 272**	$ 474	$ 559
Equities	**441**	(125)	(20)
Commodities	**231**	295	376
Foreign exchange	**295**	250	262
Other	**181**	92	51
Total	**$ 1,420**	$ 986	$ 1,228

(1) Certain comparative amounts have been restated to conform with current period presentation.

35 Earnings Per Share

For the year ended October 31 ($ millions)	2018	2017	2016
Basic earnings per common share			
Net income attributable to common shareholders	**$ 8,361**	$ 7,876	$ 6,987
Weighted average number of common shares outstanding (millions)	**1,213**	1,203	1,204
Basic earnings per common share(1) (in dollars)	**$ 6.90**	$ 6.55	$ 5.80
Diluted earnings per common share			
Net income attributable to common shareholders	**$ 8,361**	$ 7,876	$ 6,987
Dilutive impact of share-based payment options and others(2)	**16**	59	83
Net income attributable to common shareholders (diluted)	**$ 8,377**	$ 7,935	$ 7,070
Weighted average number of common shares outstanding (millions)	**1,213**	1,203	1,204
Dilutive impact of share-based payment options and others(2) (millions)	**16**	20	22
Weighted average number of diluted common shares outstanding (millions)	**1,229**	1,223	1,226
Diluted earnings per common share(1) (in dollars)	**$ 6.82**	$ 6.49	$ 5.77

(1) Earnings per share calculations are based on full dollar and share amounts.
(2) Certain tandem stock appreciation rights or options as well as acquisition related put/call options that the Bank may settle at its own discretion by issuing common shares were not included in the calculation of diluted earnings per share as they were anti-dilutive.

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36 Guarantees, Commitments and Pledged Assets

(a) Guarantees

The Bank enters into various types of guarantees and indemnifications in the normal course of business. Guarantees represent an undertaking to another party to make a payment to that party when certain specified events occur. The various guarantees and indemnifications that the Bank provides with respect to its customers and other third parties are presented below:

As at October 31 ($ millions)	2018 Maximum potential amount of future payments(1)	2017 Maximum potential amount of future payments(1)
Standby letters of credit and letters of guarantee	**$ 35,376**	$ 35,523
Liquidity facilities	**4,043**	4,996
Derivative instruments	**6,969**	5,398
Indemnifications	**571**	587

(1) The maximum potential amount of future payments represents those guarantees that can be quantified and excludes other guarantees that cannot be quantified. As many of these guarantees will not be drawn upon and the maximum potential amount of future payments listed above does not consider the possibility of recovery under recourse or collateral provisions, the above amounts are not indicative of future cash requirements, credit risk, or the Bank's expected losses from these arrangements.

(i) Standby letters of credit and letters of guarantee

Standby letters of credit and letters of guarantee are irrevocable undertakings by the Bank on behalf of a customer, to make payments to a third party in the event that the customer is unable to meet its obligations to the third party. Generally, the term of these guarantees does not exceed four years. The types and amounts of collateral security held by the Bank for these guarantees is generally the same as for loans. As at October 31, 2018, $4 million (2017 – $4 million) was included in other liabilities in the Consolidated Statement of Financial Position with respect to these guarantees.

(ii) Liquidity facilities

The Bank's backstop liquidity facilities are committed liquidity and provided to asset-backed commercial paper conduits, administered by the Bank. These facilities generally provide an alternative source of financing in the event market disruption prevents the conduit from issuing commercial paper or, in some cases, when certain specified conditions or performance measures are not met. These facilities generally have a term of up to three years.

(iii) Derivative instruments

The Bank enters into written credit derivative contracts under which a counterparty is compensated for losses on a specified referenced asset, typically a loan or bond, if certain events occur. The Bank also enters into written option contracts under which a counterparty is granted the right, but not the obligation, to sell a specified quantity of a financial instrument at a pre-determined price on or before a set date. These written option contracts are normally referenced to interest rates, foreign exchange rates, commodity prices or equity prices. Typically, a corporate or government entity is the counterparty to the written credit derivative and option contracts that meet the characteristics of guarantees described above. The maximum potential amount of future payments disclosed in the table above relates to written credit derivatives, puts and floors. However, these amounts exclude certain derivatives contracts, such as written caps, as the nature of these contracts prevents quantification of the maximum potential amount of future payments. As at October 31, 2018, $377 million (2017 – $274 million) was included in derivative instrument liabilities in the Consolidated Statement of Financial Position with respect to these derivative instruments.

(iv) Indemnifications

In the ordinary course of business, the Bank enters into many contracts which contain indemnification provisions, such as purchase contracts, service agreements, trademark licensing agreements, director / officer contracts, escrow arrangements, sales of assets or businesses, outsourcing agreements, leasing arrangements, clearing system arrangements, securities lending agency agreements and structured transactions. The Bank cannot estimate the maximum potential future amount that may be payable. The Bank has not made any significant payments under such indemnifications. Historically, the Bank has not made any significant payments under these indemnities. As at October 31, 2018, $2 million (2017 – $2 million) was included in other liabilities in the Consolidated Statement of Financial Position with respect to indemnifications.

(b) Other indirect commitments

In the normal course of business, various other indirect commitments are outstanding which are not reflected on the Consolidated Statement of Financial Position. These may include:

- Commercial letters of credit which require the Bank to honour drafts presented by a third-party when specific activities are completed;
- Commitments to extend credit which represent undertakings to make credit available in the form of loans or other financings for specific amounts and maturities, subject to specific conditions;
- Securities lending transactions under which the Bank, acting as principal or agent, agrees to lend securities to a borrower. The borrower must fully collateralize the security loan at all times. The market value of the collateral is monitored relative to the amounts due under the agreements, and where necessary, additional collateral is obtained; and
- Security purchase commitments which require the Bank to fund future investments.

These financial instruments are subject to normal credit standards, financial controls and monitoring procedures.

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The table below provides a detailed breakdown of the Bank's other indirect commitments expressed in terms of the contractual amounts of the related commitment or contract which are not reflected on the Consolidated Statement of Financial Position.

As at October 31 ($ millions)	2018	2017
Commercial letters of credit	**$ 1,046**	$ 821
Commitments to extend credit[1]		
Original term to maturity of one year or less	**75,033**	57,321
Original term to maturity of more than one year	**122,407**	128,345
Securities lending	**51,723**	40,535
Securities purchase and other commitments	**888**	614
Total	**$ 251,097**	$ 227,636

(1) Includes liquidity facilities.

(c) Lease commitments

Operating lease commitments

The Bank leases various offices, branches and other premises under non-cancellable operating lease arrangements. The leases have various terms, escalation and renewal rights. There are no contingent rents payable. The Bank also leases equipment under non-cancellable lease arrangements. Where the Bank is the lessee, the future minimum lease payment under non-cancellable operating leases are as follows:

As at October 31 ($ millions)	2018	2017
Within one year	**$ 420**	$ 349
After one year but not more than five years	**1,196**	967
More than five years	**880**	593
Total	**$ 2,496**	$ 1,909

Building rent expense, included in premises and technology expense in the Consolidated Statement of Income, was $477 million (2017 – $444 million).

(d) Assets pledged and repurchase agreements

In the ordinary course of business, securities and other assets are pledged against liabilities. As well, securities are sold under repurchase agreements. The carrying value of pledged assets and details of related activities are shown below.

As at October 31 ($ millions)	2018	2017
Assets pledged to:		
Bank of Canada[1]	**$ 118**	$ 25
Foreign governments and central banks[1]	**3,147**	2,653
Clearing systems, payment systems and depositories[1]	**1,629**	1,195
Assets pledged in relation to exchange-traded derivative transactions	**3,127**	2,181
Assets pledged in relation to over-the-counter derivative transactions	**7,246**	8,126
Assets pledged as collateral related to securities borrowing and lending	**128,383**	115,987
Assets pledged in relation to covered bond program (Note 15)	**30,725**	27,806
Assets pledged in relation to other securitization programs (Note 15)	**6,085**	4,801
Assets pledged under CMHC programs (Note 14)	**23,178**	20,471
Other	**963**	643
Total assets pledged	**$ 204,601**	$ 183,888
Obligations related to securities sold under repurchase agreements	**82,816**	86,789
Total[2]	**$ 287,417**	$ 270,677

(1) Includes assets pledged in order to participate in clearing and payment systems and depositories, or pledged to have access to the facilities of central banks in foreign jurisdictions.
(2) Includes assets that have been received from counterparties through normal course of business in securities financing and derivative transactions.

(e) Other executory contracts

Effective July 2018, the Bank has entered into an $800 million contract for naming rights of an arena for 20 years.

The Bank and its subsidiaries have also entered into other long-term executory contracts, relating to outsourced services. The significant outsourcing arrangements have variable pricing based on utilization and are cancellable with notice.

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37 Financial Instruments – Risk Management

The Bank's principal business activities result in a balance sheet that consists primarily of financial instruments. In addition, the Bank uses derivative financial instruments for both trading and hedging purposes. The principal financial risks that arise from transacting financial instruments include credit risk, liquidity risk and market risk. The Bank's framework to monitor, evaluate and manage these risks is consistent with that in place as at October 31, 2018:

- extensive risk management policies define the Bank's risk appetite, set the limits and controls within which the Bank and its subsidiaries can operate, and reflect the requirements of regulatory authorities. These policies are approved by the Bank's Board of Directors, either directly or through the Risk Committee of the Board, (the Board);
- guidelines are developed to clarify risk limits and conditions under which the Bank's risk policies are implemented;
- processes are implemented to identify, evaluate, document, report and control risk. Standards define the breadth and quality of information required to make a decision; and
- compliance with risk policies, limits and guidelines is measured, monitored and reported to ensure consistency against defined goals.

Further details on the fair value of financial instruments and how these amounts were determined are provided in Note 7. Note 10 provides details on the terms and conditions of the Bank's derivative financial instruments including notional amounts, remaining term to maturity, credit risk, and fair values of derivatives used in trading and hedging activities.

(a) Credit risk

Credit risk is the risk of loss resulting from the failure of a borrower or counterparty to honour its financial or contractual obligations to the Bank. The Bank's Credit Risk Appetite and Credit Risk Policy are developed by its Global Risk Management (GRM) department and limits are reviewed and approved by the Board on an annual and biennial basis, respectively. The Credit Risk Appetite defines target markets and risk tolerances that are developed at an all-Bank level, and then further refined at the business line level. The objectives of the Credit Risk Appetite are to ensure that, for the Bank, including the individual business lines:

- target markets and product offerings are well defined;
- the risk parameters for new underwritings and for the portfolios as a whole are clearly specified; and
- transactions, including origination, syndication, loan sales and hedging, are managed in a manner to ensure the goals for the overall portfolio are met.

The Credit Risk Policy sets out, among other things, the credit risk rating systems and associated parameter estimates, the delegation of authority for granting credit, and the calculation of allowance for credit losses. It forms an integral part of enterprise-wide policies and procedures that encompass governance, risk management and control structure.

The Bank's credit risk rating systems are designed to support the determination of key credit risk parameter estimates which measure credit and transaction risk. For non-retail exposures, parameters are associated with each credit facility through the assignment of borrower and transaction ratings. Borrower risk is evaluated using methodologies that are specific to particular industry sectors and/or business lines. The risk associated with facilities of a given borrower is assessed by considering the facilities' structural and collateral-related elements. For retail portfolios, product specific models assign accounts into homogeneous segments using internal and external borrower/facility-level credit experience. This process provides for a meaningful differentiation of risk, and allows for appropriate and consistent estimation of loss characteristics at the model and segment level. Further details on credit risk relating to derivatives are provided in Note 10(c).

(i) Credit risk exposures

Credit risk exposures disclosed below are presented based on the Basel framework utilized by the Bank i.e. exposures subject to credit risk capital. The Bank uses the Advanced Internal Ratings Based approach (AIRB) for all material Canadian, U.S., European portfolios, and effective 2011 for a significant portion of all international corporate and commercial portfolios. The remaining portfolios, including other individual portfolios, are treated under the standardized approach. Under the AIRB approach, the Bank uses internal risk parameter estimates, based on historical experience, for probability of default (PD), loss given default (LGD) and exposure at default (EAD), as defined below:

- EAD: Generally represents the expected gross exposure – outstanding amount for on-balance sheet exposure and loan equivalent amount for off-balance sheet exposure.
- PD: Measures the likelihood that a borrower will default within a 1-year time horizon, expressed as a percentage.
- LGD: Measures the severity of loss on a facility in the event of a borrower's default, expressed as a percentage of exposure at default.

Under the standardized approach, credit risk is estimated using the risk weights as prescribed by the Basel framework either based on credit assessments by external rating agencies or based on the counterparty type for non-retail exposures and product type for retail exposures. Standardized risk weights also takes into account other factors such as specific provisions for defaulted exposures, eligible collateral, and loan-to-value for real estate secured retail exposures.

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As at October 31 ($ millions)	2018				2017
	Exposure at default(1)				
Category	Drawn(2)	Undrawn commitments	Other exposures(3)	Total	Total
By counterparty type					
Non-retail					
AIRB portfolio					
Corporate	$ 146,324	$ 83,885	$ 77,751	$ 307,960	$ 285,191
Bank	22,680	2,146	16,676	41,502	40,903
Sovereign	188,480	768	6,854	196,102	195,429
	357,484	86,799	101,281	545,564	521,523
Standardized portfolio					
Corporate	59,018	5,313	3,802	68,133	59,164
Bank	3,208	160	143	3,511	2,619
Sovereign	5,299	31	6	5,336	6,337
	67,525	5,504	3,951	76,980	68,120
Total non-retail	$ 425,009	$ 92,303	$ 105,232	$ 622,544	$ 589,643
Retail					
AIRB portfolio					
Real estate secured	143,475	17,864	–	161,339	143,160
Qualifying revolving	17,337	28,550	–	45,887	44,384
Other retail	31,176	1,671	–	32,847	31,672
	$ 191,988	$ 48,085	$ –	$ 240,073	$ 219,216
Standardized portfolio					
Real estate secured	44,517	–	–	44,517	34,002
Other retail	42,100	–	–	42,100	35,552
	86,617	–	–	86,617	69,554
Total retail	$ 278,605	$ 48,085	$ –	$ 326,690	$ 288,770
Total	$ 703,614	$ 140,388	$ 105,232	$ 949,234	$ 878,413
By geography(4)					
Canada	$ 394,279	$ 89,776	$ 37,748	$ 521,803	$ 502,224
United States	102,265	33,103	42,771	178,139	157,386
Chile	47,048	1,038	5,066	53,152	27,190
Mexico	29,344	1,339	2,611	33,294	30,528
Peru	23,997	1,506	2,992	28,495	28,733
Colombia	12,729	486	434	13,649	10,859
Other International					
Europe	25,357	7,041	10,215	42,613	43,030
Caribbean	35,716	1,676	910	38,302	39,358
Latin America (other)	10,232	909	227	11,368	9,035
All other	22,647	3,514	2,258	28,419	30,070
Total	$ 703,614	$ 140,388	$ 105,232	$ 949,234	$ 878,413

(1) Exposure at default is presented after credit risk mitigation. Exposures exclude equity securities and other assets.
(2) Non-retail drawn includes loans, acceptances, deposits with financial institutions and FVOCI debt securities. Retail drawn includes residential mortgages, credit cards, lines of credit, and other personal loans.
(3) Non-retail other exposures include off-balance sheet lending instruments such as letters of credit, letters of guarantees, securitizations including nil first loss protection (2017 – nil), derivatives and repo-style transactions (reverse repurchase agreements, repurchase agreements, securities lending and securities borrowing), net of related collateral. Not applicable for retail exposures.
(4) Geographic segmentation is based upon the location of the ultimate risk of the credit exposure.

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Consolidated Statement of Financial Position asset categories cross-referenced to credit risk exposures

The table below provides mapping of on-balance sheet asset categories that are included in the various Basel III exposure categories as presented in the credit risk exposure summary table of these consolidated financial statements. In addition, it also provides other exposures which are subject to market risk and/or other assets which are not subject to market and credit risk with a reconciliation to the Consolidated Statement of Financial Position. The credit risk exposures on certain assets such as cash, precious metals, investment securities (equities) and other assets are not included on the credit risk exposure summary table. Also excluded from the credit risk exposures are certain trading assets and all assets of the Bank's insurance subsidiaries.

	Credit Risk Exposures						Other Exposures			
	Drawn		Other Exposures				Market Risk Exposures			
As at October 31, 2018 ($ millions)	Non-retail	Retail	Securitization	Repo-style Transactions	OTC Derivatives	Equity	Also subject to Credit Risk		All Other(1)	Total
Cash and deposits with financial institutions	$ 58,728	$ –	$ –	$ –	$ –	$ –	$ –	$ –	$ 3,541	$ 62,269
Precious metals	–	–	–	–	–	–	–	3,191	–	3,191
Trading assets										
Securities	24	–	–	–	–	–	–	85,450	–	85,474
Loans	7,183	12	–	–	–	–	6,606	7,139	–	14,334
Other	–	–	–	–	–	–	–	454	–	454
Financial assets designated at fair value through profit or loss	12	–	–	–	–	–	–	–	–	12
Securities purchased under resale agreements and securities borrowed	–	–	–	104,010	–	–	–	–	8	104,018
Derivative financial instruments	–	–	–	–	37,558	–	33,937	–	–	37,558
Investment securities	75,837	–	–	–	–	1,754	–	–	805	78,396
Loans:										
Residential mortgages(2)	86,417	166,752	–	–	–	–	–	–	188	253,357
Personal loans	–	94,392	1,613	–	–	–	–	–	14	96,019
Credit cards	–	14,331	687	–	–	–	–	–	1,467	16,485
Business & government	180,164	3,193	7,748	–	–	–	–	–	(67)	191,038
Allowances for credit losses(3)	(560)	(786)	–	–	–	–	–	–	(3,719)	(5,065)
Customers' liability under acceptances	16,338	–	–	–	–	–	–	–	(9)	16,329
Property and equipment	–	–	–	–	–	–	–	–	2,684	2,684
Investment in associates	–	–	–	–	–	–	–	–	4,850	4,850
Goodwill and other intangibles assets	–	–	–	–	–	–	–	–	17,719	17,719
Other (including Deferred tax assets)	866	711	–	–	–	–	–	–	17,794	19,371
Total	$ 425,009	$ 278,605	$ 10,048	$ 104,010	$ 37,558	$ 1,754	$ 40,543	$ 96,234	$ 45,275	$ 998,493

(1) Includes the Bank's insurance subsidiaries' assets and all other assets which are not subject to credit and market risks.
(2) Includes $82.2 billion in mortgages guaranteed by Canada Mortgage Housing Corporation including 90% of privately insured mortgages.
(3) Amounts for AIRB exposures are reported gross of allowances and amounts for standardized exposures are reported net of allowances.

	Credit Risk Exposures						Other Exposures			
	Drawn		Other Exposures				Market Risk Exposures			
As at October 31, 2017 ($ millions)	Non-retail	Retail	Securitization	Repo-style Transactions	OTC Derivatives	Equity	Also subject to Credit Risk		All Other(1)	Total
Cash and deposits with financial institutions	$ 57,104	$ –	$ –	$ –	$ –	$ –	$ –	$ –	$ 2,559	$ 59,663
Precious metals	–	–	–	–	–	–	–	5,717	–	5,717
Trading assets										
Securities	–	–	–	–	–	–	–	78,652	–	78,652
Loans	9,087	–	–	–	–	–	9,087	8,225	–	17,312
Other	–	–	–	–	–	–	–	2,500	–	2,500
Financial assets designated at fair value through profit or loss	13	–	–	–	–	–	–	–	–	13
Securities purchased under resale agreements and securities borrowed	–	–	–	95,319	–	–	–	–	–	95,319
Derivative financial instruments	–	–	–	–	35,364	–	30,648	–	–	35,364
Investment securities	67,255	–	–	–	–	1,281	–	–	733	69,269
Loans:										
Residential mortgages(2)	95,692	141,066	–	–	–	–	–	–	158	236,916
Personal loans(3)	–	87,892	1,314	–	–	–	–	–	21	89,227
Credit cards(3)	–	12,289	724	–	–	–	–	–	1,091	14,104
Business & government	158,510	2,878	7,032	–	–	–	–	–	29	168,449
Allowances for credit losses(4)	(649)	–	–	–	–	–	–	–	(3,678)	(4,327)
Customers' liability under acceptances	13,560	–	–	–	–	–	–	–	–	13,560
Property and equipment	–	–	–	–	–	–	–	–	2,381	2,381
Investment in associates	–	–	–	–	–	–	–	–	4,586	4,586
Goodwill and other intangibles assets	–	–	–	–	–	–	–	–	12,106	12,106
Other (including Deferred tax assets)	1,805	545	–	–	–	–	–	–	12,112	14,462
Total	$ 402,377	$ 244,670	$ 9,070	$ 95,319	$ 35,364	$ 1,281	$ 39,735	$ 95,094	$ 32,098	$ 915,273

(1) Includes the Bank's insurance subsidiaries' assets and all other assets which are not subject to credit and market risks.
(2) Includes $91.7 billion in mortgages guaranteed by Canada Mortgage Housing Corporation including 90% of privately insured mortgages.
(3) Restated to reflect the current period presentation.
(4) Amounts for AIRB exposures are reported gross of allowances and amounts for standardized exposures are reported net of allowances.

(ii) Credit quality of non-retail exposures

Credit decisions are made based upon an assessment of the credit risk of the individual borrower or counterparty. Key factors considered in the assessment include: the borrower's management; the borrower's current and projected financial results and credit statistics; the industry in which the borrower operates; economic trends; and geopolitical risk. Banking units and Global Risk Management also review the credit quality of the credit portfolio across the organization on a regular basis to assess whether economic trends or specific events may affect the performance of the portfolio.

The Bank's non-retail portfolio is well diversified by industry. As at October 31, 2018, and October 31, 2017, a significant portion of the authorized corporate and commercial lending portfolio was internally assessed at a grade that would generally equate to an investment grade rating by external rating agencies. There has not been a significant change in concentrations of credit risk since October 31, 2017.

Internal grades (IG) are used to differentiate the risk of default of a borrower. The following table cross references the Bank's internal borrower grades with equivalent ratings categories utilized by external rating agencies:

Cross referencing of internal ratings to external ratings(1)

Equivalent External Rating					
S&P	Moody's	DBRS	Internal Grade	Internal Grade Code	PD Range(2)
AAA to AA+	Aaa to Aa1	AAA to AA (high)		99 – 98	0.0000% – 0.0448%
AA to A+	Aa2 to A1	AA to A (high)		95	0.0448% – 0.1304%
A to A-	A2 to A3	A to A (low)	Investment grade	90	0.0552% – 0.1402%
BBB+	Baa1	BBB (high)		87	0.0876% – 0.2187%
BBB	Baa2	BBB		85	0.1251% – 0.3176%
BBB-	Baa3	BBB (low)		83	0.1788% – 0.4610%
BB+	Ba1	BB (high)		80	0.2886% – 0.5134%
BB	Ba2	BB		77	0.4658% – 0.5716%
BB-	Ba3	BB (low)	Non-Investment grade	75	0.5716% – 0.7518%
B+	B1	B (high)		73	0.7518% – 1.4444%
B to B-	B2 to B3	B to B (low)		70	1.4444% – 2.7749%
CCC+	Caa1	–		65	2.7749% – 10.1814%
CCC	Caa2	–	Watch list	60	10.1814% – 19.4452%
CCC- to CC	Caa3 to Ca	–		40	19.4452% – 35.4088%
–	–	–		30	35.4088% – 59.5053%
Default			Default	21	100%

(1) Applies to non-retail portfolio.
(2) PD ranges overlap across IG codes as the Bank utilizes two risk rating systems for its AIRB portfolios, and each risk rating system has its own separate IG to PD mapping.

Non-retail AIRB portfolio

The credit quality of the non-retail AIRB portfolio, expressed in terms of risk categories of borrower internal grades is shown in the table below:

		2018				2017
		Exposure at Default(1)				
As at October 31 ($ millions) Category of internal grades	IG Code	Drawn	Undrawn commitments	Other exposures(2)	Total	Total
Investment grade	**99 – 98**	**$ 77,598**	**$ 2,758**	**$ 17,456**	**$ 97,812**	$ 91,159
	95	**35,694**	**9,315**	**19,661**	**64,670**	53,618
	90	**25,281**	**15,394**	**25,234**	**65,909**	61,508
	87	**21,318**	**13,714**	**12,513**	**47,545**	44,533
	85	**21,472**	**12,861**	**9,992**	**44,325**	40,478
	83	**22,544**	**13,230**	**7,054**	**42,828**	41,600
Non-Investment grade	**80**	**26,618**	**10,019**	**2,993**	**39,630**	36,235
	77	**20,005**	**4,944**	**1,945**	**26,894**	23,058
	75	**13,267**	**2,717**	**3,296**	**19,280**	20,418
	73	**5,905**	**1,049**	**566**	**7,520**	7,271
	70	**2,157**	**432**	**228**	**2,817**	3,758
Watch list	**65**	**892**	**105**	**146**	**1,143**	2,167
	60	**936**	**90**	**78**	**1,104**	761
	40	**526**	**41**	**9**	**576**	1,311
	30	**141**	**–**	**–**	**141**	159
Default	**21**	**938**	**130**	**110**	**1,178**	1,752
Total		**$ 275,292**	**$ 86,799**	**$ 101,281**	**$ 463,372**	$ 429,786
Government guaranteed residential mortgages(3)		**82,192**	**–**	**–**	**82,192**	91,737
Total		**$ 357,484**	**$ 86,799**	**$ 101,281**	**$ 545,564**	$ 521,523

(1) After credit risk mitigation.
(2) Includes off-balance sheet lending instruments such as letters of credit, letters of guarantee, securitizations, excluding nil first loss protection (2017 – nil), derivatives and repo-style transactions (reverse repurchase agreements, repurchase agreements and securities lending and borrowing), net of related collateral.
(3) These exposures are classified as sovereign exposures and are included in the non-retail category.

Non-retail standardized portfolio

The non-retail standardized portfolio relies on external credit ratings (e.g. S&P, Moody's, DBRS, etc.,) of the borrower, if available, to compute regulatory capital for credit risk. Exposures are risk-weight based on prescribed percentages and a mapping process as defined within OSFI's Capital Adequacy Requirements Guideline. Non-retail standardized portfolio as at October 31, 2018 comprised of drawn, undrawn and other exposures to corporate, bank and sovereign counterparties amounted to $77 billion (October 31, 2017 – $68 billion). Within this portfolio, the majority of Corporate/Commercial exposures are to unrated counterparties, mainly in the Caribbean and Latin American region.

(iii) Credit quality of retail exposures

The Bank's retail portfolios consist of a number of relatively small loans to a large number of borrowers. The portfolios are distributed across Canada and a wide range of countries. As such, the portfolios inherently have a high degree of diversification. In addition, as of October 31, 2018, 43% of the Canadian banking residential mortgage portfolio is insured and the average loan-to-value ratio of the uninsured portion of the portfolio is 54%.

Retail AIRB portfolio

The data in the table below provides a distribution of the retail AIRB exposure within each PD range by asset class:

As at October 31 ($ millions)		2018					2017
		Exposure at default(1)					
		Real estate secured					
Category of (PD) grades	PD range	Mortgages	HELOC	Qualifying revolving	Other retail	Total	Total
Exceptionally Low	**0.0000% – 0.0499%**	**$ –**	**$ –**	**$ 11,657**	**$ 498**	**$ 12,155**	$ 16,026
Very Low	**0.0500% – 0.1999%**	**41,146**	**32,079**	**9,348**	**6,971**	**89,544**	80,507
Low	**0.2000% – 0.9999%**	**73,094**	**5,130**	**12,091**	**16,721**	**107,036**	94,081
Medium Low	**1.0000% – 2.9999%**	**6,494**	**1,068**	**7,893**	**5,123**	**20,578**	17,070
Medium	**3.0000% – 9.9999%**	**738**	**310**	**3,594**	**2,569**	**7,211**	8,583
High	**10.0000% – 19.9999%**	**345**	**185**	**354**	**486**	**1,370**	889
Extremely High	**20.0000% – 99.9999%**	**416**	**69**	**803**	**303**	**1,591**	1,453
Default	**100%**	**195**	**70**	**147**	**176**	**588**	607
Total		**$ 122,428**	**$ 38,911**	**$ 45,887**	**$ 32,847**	**$ 240,073**	$ 219,216

(1) After credit risk mitigation.

Retail standardized portfolio

The retail standardized portfolio of $87 billion as at October 31, 2018 (2017 – $70 billion) was comprised of residential mortgages, personal loans, credit cards and lines of credit to individuals, mainly in the Latin American and Caribbean region. Of the total retail standardized exposures, $45 billion (2017 –$34 billion) was represented by mortgages and loans secured by residential real estate, mostly with a loan-to-value ratio of below 80%.

(iv) Collateral

Collateral held

In the normal course of business, to reduce its exposure to counterparty credit risk, the Bank receives collateral for capital markets related activities. The following are examples of the terms and conditions customary to collateral for these types of transactions:

- The risks and rewards of the pledged assets reside with the pledgor.
- Additional collateral is required when the market value of the transaction exceeds thresholds agreed upon with the pledgor.
- The Bank is normally permitted to sell or repledge the collateral it receives, although this right is specific to each agreement under which the collateral is pledged.
- Upon satisfaction of the obligation, the Bank must return the pledged assets, unless the Bank has the right to sell or repledge the collateral it receives, in which case the Bank must return comparable collateral to the pledgor.

As at October 31, 2018, the approximate market value of cash and securities collateral accepted that may be sold or repledged by the Bank was $136 billion (2017 – $115 billion). This collateral is held primarily in connection with reverse repurchase agreements, margin loans, securities lending and derivative transactions. The Bank also borrows securities under standard securities borrowing agreements that it is able to re-pledge. Including these borrowed securities, the approximate market value of securities collateral accepted that may be sold or re-pledged was $183 billion (2017 – $169 billion), of which approximately $29 billion was not sold or re-pledged (2017 – $24 billion).

Collateral pledged

In the normal course of business, securities and other assets are pledged to secure an obligation, participate in clearing or settlement systems, or operate in a foreign jurisdiction. Note 36(d) details the nature and extent of the Bank's asset pledging activities. Asset pledging transactions are conducted under terms that are common and customary to standard derivative, securities financing, and other borrowing activities. Standard risk management controls are applied with respect to asset pledging.

Assets acquired in exchange for loans

The carrying value of assets acquired in exchange for loans as at October 31, 2018 was $426 million (2017 – $412 million) mainly comprised of real estate and was classified as either held for sale or held for use as appropriate.

(b) Liquidity risk

Liquidity risk is the risk that the Bank is unable to meet its financial obligations in a timely manner at reasonable prices. The Bank's liquidity risk is subject to extensive risk management controls and is managed within the framework of policies and limits approved by the Board. The Board receives reports on risk exposures and performance against approved limits. The Asset-Liability Committee (ALCO) provides senior management oversight of liquidity risk.

The key elements of the Bank's liquidity risk management framework include:

- liquidity risk measurement and management limits, including limits on maximum net cash outflow by currency over specified short-term horizons;
- prudent diversification of its wholesale funding activities by using a number of different funding programs to access the global financial markets and manage its maturity profile, as appropriate;
- large holdings of liquid assets to support its operations, which can generally be sold or pledged to meet the Bank's obligations;
- liquidity stress testing, including Bank-specific, global-systemic, and combination systemic/Bank-specific scenarios; and
- liquidity contingency planning.

The Bank's foreign operations have liquidity management frameworks that are similar to the Bank's framework. Local deposits are managed from a liquidity risk perspective based on the local management frameworks and regulatory requirements.

(i) Commitments to extend credit

In the normal course of business, the Bank enters into commitments to extend credit in the form of loans or other financings for specific amounts and maturities, subject to specific conditions. These commitments, which are not reflected on the Consolidated Statement of Financial Position, are subject to normal credit standards, financial controls and monitoring procedures.

(ii) Derivative instruments

The Bank is subject to liquidity risk relating to its use of derivatives to meet customer needs, generate revenues from trading activities, manage market and credit risks arising from its lending, funding and investment activities, and lower its cost of capital. The maturity profile of the notional amounts of the Bank's derivative instruments is summarized in Note 10(b).

(c) Market risk

Market risk arises from changes in market prices and rates (including interest rates, credit spreads, equity prices, foreign exchange rates and commodity prices), the correlations between them, and their levels of volatility. Market risk is subject to extensive risk management controls, and is managed within the framework of market risk policies and limits approved by the Board. The ALCO and Market Risk Management and Policy Committee oversee the application of the framework set by the Board, and monitor the Bank's market risk exposures and the activities that give rise to these exposures.

The Bank uses a variety of metrics and models to measure and control market risk exposures. The measurements used are selected based on an assessment of the nature of risks in a particular activity. The principal measurement techniques are Value at Risk (VaR), stress testing, sensitivity analysis and simulation modeling, and gap analysis. The Board reviews results from these metrics quarterly. Models are independently validated internally prior to implementation and are subject to formal periodic review.

VaR is a statistical measure that estimates the potential loss in value of the Bank's trading positions due to adverse market movements over a defined time horizon with a specified confidence level. The quality of the Bank's VaR is validated by regular back testing analysis, in which the VaR is compared to theoretical and actual profit and loss results. To complement VaR, the Bank also uses stress testing to examine the impact that abnormally large swings in market factors and periods of prolonged inactivity might have on trading portfolios. The stress testing program is designed to identify key risks and ensure that the Bank's capital can absorb potential losses from abnormal events. The Bank subjects its trading portfolios to a series of stress tests on a daily, weekly and monthly basis.

In trading portfolios, sensitivity analysis is used to measure the effect of changes in risk factors, including prices and volatility, on financial products and portfolios. In non-trading portfolios, sensitivity analysis assesses the effect of changes in interest rates on current earnings and on the economic value of shareholders' equity. Simulation modeling under various scenarios is particularly important for managing risk in the deposit, lending and investment products the Bank offers to its retail customers. Gap analysis is used to assess the interest rate sensitivity of the Bank's retail, wholesale banking and international operations. Under gap analysis, interest rate-sensitive assets, liabilities and derivative instruments are assigned to defined time periods, on the earlier of contractual repricing or maturity dates on the basis of expected repricing dates.

(i) Non-trading interest rate risk

Interest rate risk, inclusive of credit spread risk, is the risk of loss due to the following: changes in the level, slope and curvature of the yield curve; the volatility of interest rates; mortgage prepayment rates; changes in the market price of credit; and the creditworthiness of a particular issuer. The Bank actively manages its interest rate exposures with the objective of protecting and enhancing net interest income within established risk tolerances. Interest rate risk arising from the Bank's funding and investment activities is managed in accordance with Board-approved policies and global limits, which are designed to control the risk to net interest income and economic value of shareholders' equity. The income limit measures the effect of a specified shift in interest rates on the Bank's annual net income over the next twelve months, while the economic value limit measures the impact of a specified change in interest rates on the present value of the Bank's net assets. These calculations are based on a constant balance sheet and make no assumptions for management actions that may mitigate the risk.

Interest rate sensitivity

Based on the Bank's interest rate positions, the following table shows the pro-forma after-tax impact on the Bank's net interest income over the next twelve months and economic value of shareholders' equity of an immediate and sustained 100 basis point increase and decrease in interest rates across major currencies as defined by the Bank.

As at October 31 ($ millions)	2018						2017	
	Net income			Economic value of equity				
	Canadian dollar	Other currencies	Total	Canadian dollar	Other currencies	Total	Net income	Economic value of equity
100 bp increase	**$ (181)**	**$ 76**	**$ (105)**	**$ (458)**	**$ (412)**	**$ (870)**	$ 64	$ (354)
100 bp decrease	**$ 177**	**$ (76)**	**$ 101**	**$ 291**	**$ 506**	**$ 797**	$ (67)	$ 183

(ii) Non-trading foreign currency risk

Foreign currency risk is the risk of loss due to changes in spot and forward rates, and the volatility of currency exchange rates. Non-trading foreign currency risk, also referred to as structural foreign exchange risk, arises primarily from the Bank's net investments in self-sustaining foreign operations and is controlled by a Board-approved limit. This limit considers potential volatility to shareholders' equity as well as the potential impact on capital ratios from foreign exchange fluctuations. On a quarterly basis, the Asset-Liability Committee (ALCO) reviews the Bank's exposures to these net investments. The Bank may fully or partially hedge this exposure by funding the investments in the same currency, or by using other financial instruments, including derivatives.

The Bank is subject to foreign currency risk on the earnings of its foreign operations. To manage this risk, foreign currency revenues and expenses, which are primarily denominated in U.S. dollars, are projected over a number of future fiscal quarters. The ALCO assesses economic data and forecasts to decide on the portion of the estimated future foreign currency revenues and expenses to hedge. Hedging instruments normally include foreign currency spot and forward contracts, as well as foreign currency options and swaps.

As at October 31, 2018, a one percent increase (decrease) in the Canadian dollar against all currencies in which the Bank operates decreases (increases) the Bank's before-tax annual earnings by approximately $65 million (October 31, 2017 – $58 million) in the absence of hedging activity, primarily from exposure to U.S. dollars. A similar change in the Canadian dollar as at October 31, 2018 would increase (decrease) the unrealized foreign currency translation losses in the accumulated other comprehensive income in equity by approximately $384 million (2017 – $345 million), net of hedging.

(iii) Non-trading equity risk

Equity risk is the risk of loss due to adverse movements in equity prices. Equity price risk is often classified into two categories: general equity risk, which refers to the sensitivity of an instrument or portfolio's value to changes in the overall level of equity prices, and specific equity risk, which refers to that portion of an individual equity instrument's price volatility that is determined by entity-specific characteristics.

The Bank is exposed to equity risk through its equity investment portfolios, which are controlled by Board-approved portfolio, VaR, and stress-test limits. Equity investments include common and preferred shares, as well as a diversified portfolio of third-party managed funds.

The majority of the Bank's equity investment portfolios are managed by Group Treasury under the strategic direction of the ALCO. Group Treasury delegates the management of a portion of equity and equity-related portfolios to other external fund managers to take advantage of these fund managers' expertise in particular market niches and products.

The fair value of equity securities designated at FVOCI is shown in Note 12.

(iv) Trading portfolio risk management

The Bank's policies, processes and controls for trading activities are designed to achieve a balance between pursuing profitable trading opportunities and managing earnings volatility within a framework of sound and prudent practices. Trading activities are primarily customer focused.

Market risk arising from the Bank's trading activities is managed in accordance with Board-approved policies and limits, including aggregate VaR and stress testing limits.

Trading portfolios are marked-to-market in accordance with the Bank's valuation policies. Positions are marked-to-market daily and valuations are independently reviewed by back office, GRM or finance units on a regular basis. These units also provide profit and loss reporting, as well as VaR and limit compliance reporting to business unit management and executive management for evaluation and action as appropriate. VaR is calculated daily using a 99% confidence level, and a one-day holding period. This means that, once in every 100 days, the trading positions are expected to lose more than the VaR estimate. The Bank calculates general market risk VaR using historical simulation based on 300 days of market data. For debt specific risk VaR, the Bank uses historical resampling. The table below shows the Bank's VaR by risk factor:

		For the year ended October 31, 2018			
($ millions)	**As at October 31, 2018**	Average	High	Low	As at October 31, 2017
Credit spread plus interest rate	**$ 11.0**	**$ 11.6**	**$ 17.8**	**$ 6.9**	$ 10.1
Credit spread	**6.2**	**7.8**	**12.2**	**4.8**	6.9
Interest rate	**7.7**	**9.5**	**17.2**	**4.3**	8.4
Equities	**5.8**	**3.0**	**15.5**	**1.2**	3.2
Foreign exchange	**2.8**	**3.3**	**5.8**	**1.1**	2.9
Commodities	**1.7**	**1.6**	**2.1**	**1.0**	1.3
Debt specific	**3.6**	**3.4**	**4.2**	**2.6**	3.3
Diversification effect	**(11.7)**	**(10.0)**	**n/a**	**n/a**	(10.3)
All-Bank VaR	**$ 13.2**	**$ 12.9**	**$ 18.4**	**$ 8.6**	$ 10.6
All-Bank stressed VaR	**$ 44.6**	**$ 42.7**	**$ 59.0**	**$ 26.3**	$ 34.7

Below are the market risk capital requirements as at October 31, 2018.

($ millions)	
All-Bank VaR	**$ 124**
All-Bank stressed VaR	**419**
Incremental risk charge	**95**
Standardized approach	**31**
Total market risk capital	**$ 669**(1)

(1) Equates to $8,357 million of risk-weighted assets (2017 – $7,839 million).

(d) Operational risk

Operational risk is the risk of loss, whether direct or indirect, to which the Bank is exposed due to inadequate or failed internal processes or systems, human error, or external events. Operational risk includes legal and regulatory risk, business process and change risk, fiduciary or disclosure breaches, technology failure, financial crime and environmental risk. Operational risk, in some form, exists in each of the Bank's businesses and support activities, and can result in financial loss, regulatory sanctions and damage to the Bank's reputation. The Bank has developed policies, processes and assessment methodologies to ensure that operational risk is appropriately identified and managed with effective controls with a view to safeguarding client assets and preserving shareholder value.

38 Business Combinations

Acquisitions that closed in 2018

Jarislowsky, Fraser Limited, Canada

On May 1, 2018, the Bank completed the acquisition of Jarislowsky, Fraser Limited, an independent investment firm with approximately $40 billion in assets under management on behalf of institutional and high net worth clients. The purchase price of $978 million was satisfied primarily by the issuance of 11.1 million common shares valued at $878 million and cash of $44 million. The fair value of the common shares issued is based on the quoted price of the shares of the Bank as at May 1, 2018 which was $78.86. Included in this purchase price is an earn-out of an amount of $56 million in additional common shares which may be paid based on achieving future growth targets. The acquired business forms part of the Canadian Banking business segment.

The fair value of the identifiable net assets of Jarislowsky, Fraser Limited at the date of acquisition was:

($ million)	
Total net assets acquired	$ 9
Intangible assets	
Finite life intangible asset arising on acquisition(1)	255
Indefinite life intangible assets arising on acquisition(2)	308
Deferred tax liability	(150)
Goodwill arising on acquisition	556
Purchase consideration transferred	$ 978

(1) Comprised of customer relationship intangible of $255.
(2) Comprised of fund management contracts of $290 and trademark of $18.

Goodwill of $556 million largely reflects the value of synergies expected by combining certain operations within the Bank's asset management businesses as well as Jarislowsky Fraser's strong market presence and future growth prospects.

Citibank's consumer and small and medium enterprise operations, Colombia

On June 30, 2018, the Bank's Colombian subsidiary, Scotiabank Colpatria S.A., completed the previously announced acquisition of Citibank's consumer (retail and credit cards) and small and medium enterprise operations in Colombia. The acquired business forms part of the Bank's International Banking business segment.

The Bank has not finalized its initial accounting for the acquisition as it is still completing its valuation of the assets acquired and liabilities assumed. As at October 31, 2018, $2.0 billion of assets (mainly loans of $1.9 billion) and $1.4 billion of liabilities (mainly deposits of $1.3 billion) have been recorded. Subsequent adjustment during the measurement period will occur as the Bank completes its estimation of fair values of assets acquired and liabilities assumed.

BBVA, Chile

On July 6, 2018, the Bank acquired 68.2% of Banco Bilbao Vizcaya Argentaria, Chile, 100% of BBVA Seguros Vida S.A., 100% of Servicios Corporativos S.A., 68.1% of Inmobiliaria e Inversiones S.A. and 4.1% of Inversiones DCV S.A. (together "BBVA Chile") in Chile for cash consideration of US$ 2.2 billion, following receipt of regulatory approvals in Chile and Canada. The Bank consolidated 100% of BBVA Chile's assets and liabilities and recorded a non-controlling interest of 31.8%. The acquired business forms part of the International Banking business segment.

On September 1, 2018, BBVA Chile merged with Scotiabank Chile. The minority shareholder in BBVA Chile paid the Bank US$ 0.4 billion to increase their pro forma ownership of the merged entity. Subsequent to these transactions, the Bank retained control over the combined entity with 75.5% of the total shares. Under this agreement, the non-controlling shareholders have the option to sell all or a portion of their shares to the Bank at the then fair value, which can be settled, at the Bank's discretion, by the issuance of common shares or cash.

Based on the current estimates of acquisition date fair values, the Bank has estimated and recorded loans of $19.9 billion, other assets of $8.4 billion and an aggregate amount of goodwill and intangibles of $1.3 billion. Simultaneously, the Bank has recorded deposits of $13.4 billion and other liabilities of $12.8 billion. The Bank had recorded a non-controlling interest in BBVA Chile of approximately $0.6 billion at the time of the acquisition, which changed to approximately $0.8 billion at the time of the merger of BBVA Chile with Scotiabank Chile. The purchase price allocation is considered to be preliminary and subsequent adjustments during the measurement period will occur as the Bank completes its estimation of fair values of assets acquired and liabilities assumed.

MD Financial Management, Canada

On October 3, 2018, the Bank completed the previously announced acquisition of MD Financial Management ("MD Financial") from the Canadian Medical Association, ("CMA"), for approximately $2.7 billion, payable in cash. MD Financial is Canada's leading provider of financial services to physicians and their families, with approximately $49 billion in assets under management and administration. The acquired business forms part of the Canadian Banking business segment.

On closing, the Bank and the CMA entered into a 10- year affinity agreement under which the Bank has committed to pay $115 million over the next 10 years to support the advancement of the medical profession and health care in Canada.

Based on current estimates of acquisition date fair values, the Bank has estimated and recorded approximately $1.9 billion of indefinite life intangibles, goodwill of $1.2 billion, $70 million of finite life intangibles, $0.5 billion of deferred tax liabilities and $0.1 billion of other net assets acquired. The

purchase price allocation is considered to be preliminary and will be refined as the Bank completes its valuation of the fair value of assets acquired and liabilities assumed.

Aggregate impact to Consolidated Income

For the year ended October 31, 2018, all four acquisitions contributed revenue of $394 million in aggregate and a net loss of $257 million in aggregate.

The primary reason for the net loss is the recording of a provision for credit losses of $404 million ($285 million after-tax) on acquired performing financial assets, as required under IFRS 9.

Acquisition costs directly related to the four acquisitions of $44 million are included in non-interest expenses in the Consolidated Statement of Income.

Acquisitions announced but not closed

Banco Cencosud, Peru

On May 9, 2018, the Bank announced that Scotiabank Peru, its wholly owned subsidiary, has reached an agreement to acquire a 51% controlling interest in Banco Cencosud, which offers credit cards and consumer loans in Peru, for approximately $130 million. Under the terms of the agreement, the two companies will also enter into a 15-year partnership to manage the credit card business and provide additional products and services to customers.

Subject to regulatory approvals and closing conditions the acquisition is expected to close in the first quarter of 2019.

Banco Dominicano del Progreso, Dominican Republic

On August 14, 2018, the Bank announced that it has reached an agreement to acquire Banco Dominicano del Progreso, S.A. – Banco Múltiple (Banco Dominicano del Progreso), a bank with operations in the Dominican Republic, subject to regulatory approval. The transaction is not considered financially material to the Bank.

Subject to regulatory approvals and closing conditions the acquisition is expected to close in the first quarter of 2019.

Management's Report on Internal Control Over Financial Reporting

The management of The Bank of Nova Scotia (the Bank) is responsible for establishing and maintaining adequate internal control over financial reporting, and have designed such internal control over financial reporting to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with International Financial Reporting Standards as issued by The International Accounting Standards Board.

Management has used the Internal Control – Integrated Framework (2013) to evaluate the effectiveness of internal control over financial reporting, which is a recognized and suitable framework developed by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

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.

Management has evaluated the design and operation of the Bank's internal control over financial reporting as of October 31, 2018, and has concluded that such internal control over financial reporting is effective. There are no material weaknesses that have been identified by management in this regard.

KPMG LLP, the independent auditors appointed by the shareholders of the Bank, who have audited the consolidated financial statements, have also audited internal control over financial reporting and have issued their report below.

Brian J. Porter
President and Chief Executive Officer

Raj Viswanathan
Executive Vice President and Chief Financial Officer

Toronto, Canada
November 27, 2018

Report of Independent Registered Public Accounting Firm

To the Shareholders of The Bank of Nova Scotia

We have audited The Bank of Nova Scotia's (the "Bank") 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 financial statements of the Bank, which comprise the consolidated statements of financial position 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 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 November 27, 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 Report on Internal Control over Financial Reporting". 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.



Chartered Professional Accountants, Licensed Public Accountants

November 27, 2018

CORPORATE GOVERNANCE

Corporate Governance Regulation

The Board of Directors and management believe that a strong, effective, independent Board plays a crucial role in building long-term sustainable growth in shareholder value, maximizing the value shareholders receive from their investment in the Bank and protecting the interests of stakeholders. The Board is committed to meeting high standards of corporate governance in all aspects of the Bank's affairs.

The Bank's corporate governance practices are regulated by many different parties, including the Bank's primary regulator, the Office of the Superintendent of Financial Institutions Canada, and the Board looks to evolving best practices domestically and internationally in reviewing its corporate governance practices. Our practices:

- Meet or exceed the standards set out in the guidelines and rules of the Bank Act (Canada) (the "Bank Act") and those of the Canadian Securities Administrators ("CSA") – which include National Instrument 52-110, National Instrument 52-109, National Policy 58-201 and National Instrument 58-101, and
- Comply with applicable requirements of the New York Stock Exchange ("NYSE") and the Sarbanes-Oxley Act of 2002, including applicable rules of the U.S. Securities and Exchange Commission.

The Bank is not required to comply with most of the NYSE corporate governance rules. However, the Bank meets or exceeds these rules in all significant respects, except as summarized in the Corporate Governance section of the Bank's website (www.scotiabank.com).

The Corporate Governance Policies and the committee charters are available in the Corporate Governance section of the Bank's website and in print to any shareholder who requests a copy from the Bank's Secretary. Additional information on the Bank's Audit and Conduct Review Committee, including a copy of its charter and descriptions of its members and their applicable education and experience, can be found in Exhibit 1, the Bank's Annual Information Form under the heading "The Bank's Audit and Conduct Review Committee" and in Schedule "C" thereto.

Director Independence

The Bank is committed to complying with all applicable laws, rules and regulations related to the status of its Directors. The Bank defines a Director who does not have a direct or indirect material relationship with the Bank as independent. The Board has approved Director Independence Standards (the "Independence Standards"), which provide a framework for the Board to assess any material relationships of the Directors with the Bank. The Independence Standards are derived from the Bank Act Affiliated Persons Regulations, the CSA rules and the NYSE corporate governance rules. Each year:

- The Board reviews its Directors against these standards, considering all relevant facts and circumstances, including the relationship of the non-management Directors to the Bank — as well as any relationship to the Bank of their spouses, children, principal business affiliations and any other relevant individuals.
- All Directors complete a detailed questionnaire to inform this review.
- All Directors certify their compliance with the Bank's Code of Conduct, including the requirement that they declare any material interest in matters coming before the Board.

Brian J. Porter is non-independent, due to his position as President and Chief Executive Officer. Eduardo Pacheco is also non-independent, due to his business relationships with the Bank and its subsidiary, Banco Colpatria.

That means, 14 of the current 16 (or 88%) Directors are independent, including Thomas C. O'Neill, the Chairman of the Board.

The Board also takes appropriate steps to ensure that the Board is able to function independent of management. The independent members of the Board held an "in camera" session at all regularly scheduled Board meeting held in fiscal 2018. The non-executive members of the Board held an "in camera" session at all regularly scheduled Board meetings held in fiscal 2018.

The following Directors are independent: Nora A. Aufreiter, Guillermo E. Babatz, Scott B. Bonham, Charles H. Dallara, Tiff Macklem, Thomas C. O'Neill, Michael D. Penner, Una M. Power, Aaron W. Regent, Indira V. Samarasekera, Susan L. Segal, Barbara S. Thomas, L. Scott Thomson and Benita M. Warmbold.

Director Independence Standards

A majority of the Bank's directors are independent, as required by the CSA's National Policy 58-201 — *Corporate Governance Guidelines* and the NYSE listed company corporate governance rules. To be considered independent under these rules, the Board must determine that a director has no direct or indirect material relationship with the Bank. A material relationship is a relationship that could, in the view of the Board, be reasonably expected to interfere with the exercise of a director's judgment independent of management. The rules permit the Board to adopt categorical standards in making its independence determinations. The standards adopted by the Board are reproduced below. Definitions and interpretation of terms in the standards are in accordance with applicable source rules and regulations, as amended from time to time. In applying these standards, the Board broadly considers all relevant facts and circumstances.

1. A director will not be independent if:
    - the director is, or has been within the last three years, an employee or executive officer of the Bank or a subsidiary, or an immediate family member of the director is, or has been within the last three years, an executive officer of the Bank or a subsidiary;
    - the director has received, or an immediate family member of the director has received for service as an executive officer, during any twelve-month period within the last three years, more than the lesser of Cdn$75,000 and US$120,000 in direct compensation from the Bank or a subsidiary, other than director and committee fees and pension or other forms of deferred compensation for prior service (provided such compensation is not contingent in any way on continued service);
    - (a) the director or an immediate family member of the director is a current partner of a firm that is the Bank's or a subsidiary's internal or external auditor; (b) the director is a current employee of such firm; (c) an immediate family member of the director is a current employee of such a firm and personally works on the Bank's or a subsidiary's audit, or the director's spouse, or child or stepchild who shares a home with the director, is an employee of such firm and participates in the firm's audit, assurance or tax compliance (but not tax planning) practice; or (d) the director or an immediate family member was within the last three years a partner or employee of such a firm and personally worked on the Bank's or a subsidiary's audit within that time;
    - the director or an immediate family member of the director, is, or has been within the last three years, employed as an executive officer of another company where any of the Bank's or a subsidiary's present executive officers at the same time serves or served on that company's compensation committee;
    - the director is currently an employee, or an immediate family member of the director is currently an executive officer, of a company that has made payments to, or received payments from, the Bank or a subsidiary for property or services in an amount which, in any of the last three fiscal years, exceeds the greater of US$1 million or 2% of such other company's consolidated gross revenues (with the exception that contributions to tax exempt organizations shall not be considered payments for this purpose); or
    - the director is "affiliated" with the Bank as that term is used in the Affiliated Persons (Banks) Regulations made under the Bank Act.

An "immediate family member" includes a person's spouse, parents, children, stepchildren, siblings, mothers and fathers-in-law, sons and daughters-in-law, brothers and sisters-in-law, and anyone (other than domestic employees) who shares the person's home.

2. In addition to satisfying the independence standards set forth above, members of the audit committee must satisfy the following additional independence requirements:
    - An audit committee member may not accept, directly or indirectly, any consulting, advisory or other compensatory fee from the Bank or any subsidiary, other than compensation in his

or her capacity as a member of the Board or any committee or any fixed amount of compensation under a retirement plan (including deferred compensation) for prior service with the Bank (provided such compensation is not contingent in any way on continued service).

- An audit committee member may not be an “affiliated” person of the Bank or any subsidiary, as defined in applicable Canadian and U.S. securities laws.

The indirect acceptance by an audit committee member of any consulting, advisory or other compensatory fee includes acceptance of such fee by a spouse, minor child or stepchild or a child or stepchild who shares a home with the audit committee member or by an entity in which such audit committee member is a partner, member, an officer such as a managing director occupying a comparable position or executive officer, or occupies a similar position (except limited partners, non-managing members and those occupying similar positions who, in each case, have no active role in providing services to the entity) and which provides accounting, consulting, legal, investment banking or financial advisory services to the Bank or any subsidiary.

3. In addition to satisfying the independence standards set forth above in section 1, in affirmatively determining the independence of any director who will serve on the Bank’s compensation committee, the Board must consider all factors specifically relevant to determining whether a director has a relationship to the Bank which is material to that director’s ability to be independent from management in connection with the duties of a compensation committee member, including, but not limited to:

    - the source of compensation of such director, including any consulting, advisory or other compensatory fee paid by the Bank or a subsidiary to such director; and
    - whether such director is affiliated with the Bank, a subsidiary of the Bank or an affiliate of a subsidiary of the Bank.

Whether directors meet these categorical independence standards will be reviewed and will be made public annually prior to their standing for re-election to the Board. The Board will examine relationships such as the nature of the director’s banking, lending or other business dealings with the Bank or a director’s role in a charitable organization which has received a certain level of contributions from the Bank. For relationships not covered by the standards in section 1 above, the determination of whether the relationship is material, and therefore whether the director would be independent, will be made by the directors who satisfy those standards. The Bank will disclose the basis for any Board determination that a relationship is immaterial despite the fact that it does not meet the categorical standards set forth above.

Exhibit 99.6

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CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors of The Bank of Nova Scotia

We consent to the incorporation by reference of our reports, each dated November 27, 2018, with respect to the consolidated financial statements and the effectiveness of internal control over financial reporting included in this annual report on Form 40-F.

We also consent to the incorporation by reference of such reports in the Registration Statement – Form F-3 – File No. 333-215597 and the Registration Statement – Form S-8 – File No. 333-199099 of the Bank.

KPMG LLP

Chartered Professional Accountants, Licensed Public Accountants
November 27, 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 99.7

CERTIFICATIONS

I, BRIAN J. PORTER, certify that:

1. I have reviewed the annual report on Form 40-F of The Bank of Nova Scotia;

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(s) 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(s) 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: November 27, 2018

/s/ Brian J. Porter
Brian J. Porter
President and Chief Executive Officer

CERTIFICATIONS

I, RAJAGOPAL VISWANATHAN, certify that:

1. I have reviewed the annual report on Form 40-F of The Bank of Nova Scotia;

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(s) 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(s) 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: November 27, 2018

/s/ Rajagopal Viswanathan
Rajagopal Viswanathan
Executive Vice-President and Chief Financial Officer

Exhibit 99.8

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ENACTED PURSUANT TO
SECTION 906 OF THE U.S. SARBANES-OXLEY ACT OF 2002

In connection with the annual report of The Bank of Nova Scotia (the "Bank") on Form 40-F for the year ended October 31, 2018 (the "Report") as filed with the U.S. Securities and Exchange Commission,

I, Brian J. Porter, President and Chief Executive Officer of the Bank, certify, pursuant to 18 U.S.C. section 1350, as enacted pursuant to section 906 of the U.S. Sarbanes-Oxley Act of 2002, that to my knowledge:

(i) the Report fully complies with the requirements of section 13(a) or 15(d) of the U.S. Securities Exchange Act of 1934; and

(ii) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Bank.

November 27, 2018

/s/ Brian J. Porter
Brian J. Porter
President and Chief Executive Officer

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ENACTED PURSUANT TO
SECTION 906 OF THE U.S. SARBANES-OXLEY ACT OF 2002

In connection with the annual report of The Bank of Nova Scotia (the "Bank") on Form 40-F for the year ended October 31, 2018 (the "Report") as filed with the U.S. Securities and Exchange Commission,

I, Rajagopal Viswanathan, Executive Vice-President and Chief Financial Officer of the Bank, certify, pursuant to 18 U.S.C. section 1350, as enacted pursuant to section 906 of the U.S. Sarbanes-Oxley Act of 2002, that to my knowledge:

(i) the Report fully complies with the requirements of section 13(a) or 15(d) of the U.S. Securities Exchange Act of 1934; and

(ii) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Bank.

November 27, 2018

/s/ Rajagopal Viswanathan
Rajagopal Viswanathan
Executive Vice-President and Chief Financial Officer