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, 2022

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, 8th 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	Trading Symbol(s)	Name of each exchange on which registered
Common Shares	BNS	New York Stock Exchange Toronto 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	1,191,375,095
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. ☐

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

Auditor name: KPMG LLP *Auditor location:* Toronto, ON, Canada *Auditor Firm ID:* 85

† 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 138 of Exhibit 99.3, 2022 Consolidated Financial Statements. In addition, The Bank of Nova Scotia's (the "Bank") Audit and Conduct Review Committee of the Board of Directors has reviewed, and the Board of Directors has reviewed and approved, the 2022 Consolidated Financial Statements and Management's Discussion and Analysis prior to release. The Bank 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, 2022, 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, 2022.

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, 2022.

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 EXPERTS

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 meets the definition of a financial expert. The Bank's Board of Directors has determined that Una M. Power, W. Dave Dowrich, Aaron W. Regent 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"). The Code has been in place for many years and applies to all directors, officers, employees and contingent workers of the Bank. A copy of the Code was most recently filed as an exhibit to Form 6-K filed with the SEC (EDGAR Company Filings) on November 29, 2022. The Code is also available on the Bank's website at www.scotiabank.com, in the Governance section, and is available in print to any person, without charge, upon written request to the Corporate Secretary of the Bank at the Toronto executive office address shown above., The Whistleblower Policy (Enterprise-wide), is also posted on the Bank's website. The Whistleblower Policy supports adherence to the Code. Amendments to the Code 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 granted in fiscal 2022.

PRINCIPAL ACCOUNTANT FEES AND SERVICES

The disclosure provided in Table 80 "Fees paid to the shareholders' auditors" on page 125 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 2022 and 2021 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 70 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 151 to 164, note 7 on pages 166 to 171, note 10 on pages 174 to 181, note 14 on pages 195 to 196, note 15 on pages 196 to 198, note 23 on pages 202 to 203, note 24 on pages 203 to 206, note 34 on pages 222 to 223 and note 35 on pages 223 to 230 of Exhibit 99.3, 2022 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 166 to 171, note 20 on page 201, note 28 on pages 211 to 216, note 34 on pages 222 to 223 and note 35 on pages 223 to 230 of Exhibit 99.3, 2022 Consolidated Financial Statements, is incorporated by reference into "Contractual maturities and 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, W. Dave Dowrich (financial expert), Lynn K. Patterson, Michael D. Penner, Aaron W. Regent (financial expert), Susan L. Segal and Benita M. 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 https://www.scotiabank.com/ca/en/about/our-company/governance.html.

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: Group Head and Chief Financial Officer

Date: November 29, 2022

EXHIBIT INDEX

Exhibit No.	Description
99.1	Annual Information Form dated November 29, 2022
99.2	Management's Discussion and Analysis (pages 14 through 131 of the 2022 Annual Report)
99.3	2022 Consolidated Financial Statements (pages 137 through 230 of the 2022 Annual Report)
99.4	Management's Report on Internal Control over Financial Reporting and Report of Independent Registered Public Accounting Firm (page 132 of the 2022 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
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

Exhibit 99.1

The Bank of Nova Scotia

ANNUAL INFORMATION FORM

NOVEMBER 29, 2022



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INFORMATION IS AT OCTOBER 31, 2022, 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 29, 2022 (the "AIF"), are disclosed in the Management's Discussion and Analysis for the year ended October 31, 2022 (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, 2022. 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 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 2022 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," "target," "project," "commit," "objective," and similar expressions of future or conditional verbs, such as "will," "may," "should," "would," "might," "can" and "could" and positive and negative variations thereof.

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; the possible effects on our business of war or terrorist actions and unforeseen consequences arising from such actions; 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, and the extent to which products or services previously sold by the Bank require the Bank to incur liabilities or absorb losses not contemplated at their origination; 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; climate change and other environmental and social risks,

including sustainability that may arise, including from the Bank's business activities; the occurrence of natural and unnatural catastrophic events and claims resulting from such events; inflationary pressures; Canadian housing and household indebtedness; the emergence of widespread health emergencies or pandemics, including the magnitude and duration of the COVID-19 pandemic and its impact on the global economy, financial market conditions and the Bank's business, results of operations, financial condition and prospects; 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 2022 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 2022 Annual Report under the headings "Outlook", as updated by quarterly reports. The "Outlook" and "2023 Priorities" 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 exception of Scotia Holdings (US) Inc. which is 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, 2022, the Bank's net income attributable to common shareholders was $9,656 million, up from $9,391 million in 2021. The Bank's net income attributable to common shareholders was $6,582 million in 2020. Earnings per share (on a diluted basis) for the fiscal year ended October 31, 2022 was $8.02 compared to $7.70 in 2021 and $5.30 in 2020.

Return on equity for the fiscal year ended October 31, 2022 was 14.8%, compared to 14.7% in 2021 and 10.4% in 2020. In fiscal 2022, the Bank's actual dividend payout ratio was 50.3% compared to 46.5% in 2021 and 66.3% in 2020.

On September 26, 2022, the Bank announced Brian Porter's decision to retire as President and Chief Executive Officer, effective January 31, 2023. The Bank's Board of Directors appointed Scott Thomson as CEO of the Bank, effective February 1, 2023. Mr. Thomson will initially serve as President, effective December 1, 2022, with responsibility for the Bank's four business lines. To support the transition, Mr. Porter will become a Strategic Advisor to Mr. Thomson from February 1, 2023 to April 30, 2023.

For additional information on the Bank's businesses, see the descriptions provided below and on pages 40 to 52 of the MD&A.

Certain acquisitions and dispositions that have influenced the general development of the Bank's business over the past three years are summarized below, for additional information on acquisitions and divestitures, see note 36 to the Bank's consolidated financial statements for the year ended October 31, 2022.

On October 27, 2022, the Bank completed the sale of its interest in Thanachart Insurance Public Company Limited and Thanachart Securities Public Company Limited.

On October 26, 2022, the Bank completed the sale of its 26.8% interest in Banco del Caribe, C.A and its 23.4% interest in Inversiones Americana del Caribe (IAC), B.V. subject to customary closing conditions.

The Bank has made the decision to wind down its operations in India and Malaysia as part of the realignment of Global Banking and Markets business in the Asia Pacific region.

On June 9, 2022, the Bank announced that the agreement for the sale of its banking operations in Guyana to First Citizens Bank Limited, initially signed on March 3, 2021, has expired and has therefore been terminated in accordance with its terms.

On February 27, 2022, the Bank increased its ownership in Scotiabank Chile through the acquisition of an additional 16.8% stake for $1.2 billion from the non-controlling interest shareholders, resulting in 99.8% ownership of Scotiabank Chile.

On September 1, 2021, the Bank announced that it has completed the sale of its banking operations in Antigua and Barbuda to Eastern Caribbean Amalgamated Bank Limited, upon receiving regulatory approvals and satisfying closing conditions.

On May 12, 2021, the Bank increased its ownership in Scotiabank Chile through the acquisition of an additional 7.0% stake from the non-controlling interest shareholder for $481 million, resulting in ownership of 83% in Scotiabank Chile.

On March 31, 2021, the Bank completed the sale of its 100% interest in Scotiabank (Belize) Ltd. to Caribbean Investment Holdings Limited, upon receiving regulatory approvals and satisfying closing conditions.

On March 3, 2021, the Bank announced that it has entered into an agreement to sell its banking operations in Guyana to First Citizens Bank Limited.

On May 31, 2020, the Bank completed the sale of its banking operations in the British Virgin Islands to Republic Financial Holdings Limited.

On January 31, 2020, the Bank completed the sale of its banking and insurance operations in El Salvador, including Scotiabank El Salvador, its subsidiaries and Scotia Seguros to Imperia Intercontinental Inc.

On December 31, 2019, the Bank completed the sale of its operations in Puerto Rico and the U.S. Virgin Islands ("USVI") to Oriental Bank, a subsidiary of OFG Bancorp.

On December 3, 2019, the Bank completed the sale to reduce its 49% interest in Thanachart Bank Public Company Limited ("TBank") in Thailand, upon receiving regulatory approvals and satisfying closing conditions. As part of agreements entered into with ING Groep N.V., TBank, Thanachart Capital Public Co., Ltd. and TMB Bank Public Company Limited ("TMB") in August 2019, the Bank sold its 49% interest in TBank in exchange for cash and an approximately 6% ownership interest in the form of common shares in TMB. As per the agreements, TBank became a wholly-owned subsidiary of TMB.

DESCRIPTION OF THE BANK'S BUSINESS

General Summary

Scotiabank is a leading bank in the Americas. We help our customers, their families and their communities achieve success 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.

For the year ended October 31, 2022, the Bank's four business operating segments are: Canadian Banking, International Banking, Global Wealth Management 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 and Commercial Banking customers. It serves these customers through its network of 941 branches and 3,725 automated banking machines (ABMs), as well as online, mobile and telephone banking, and specialized sales teams. Canadian Banking also provides an alternative self directed banking solution to over 2 million Tangerine Bank customers.

International Banking is a strong and diverse franchise with over 11 million Retail, Corporate and Commercial customers. The geographical footprint encompasses the Pacific Alliance countries of Mexico, Chile, Peru and Colombia, as well as Central America, the Caribbean and Uruguay. The Bank is well positioned in the Pacific Alliance, providing the connectivity to do business across the Americas through Corporate Banking and Digital leadership. The Bank's core markets in the Pacific Alliance countries demonstrate attractive demographics, opportunities to grow banking penetration, and strong connectivity with Canada and the U.S.

Global Wealth Management is focused on delivering comprehensive wealth management advice and solutions to clients across the Bank's footprint. Global Wealth Management serves over 2 million investment fund and advisory clients across 13 countries – administering over $500 billion in assets.

Global Banking and Markets (GBM) provides corporate clients with lending and transaction services, investment banking advice and access to capital markets. GBM is a full-service wholesale bank in the Americas, with operations in 21 countries, serving clients across Canada, the United States, Latin America, Europe and Asia-Pacific.

A more complete description of services provided by each of the Bank's major business lines is available in the MD&A, on pages 40 to 52 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 35 domestic banks, 15 foreign banks and numerous 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.

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. Additionally, a growing 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.

Scotiabank is a financial services provider in the Americas. In providing these services and products, the Bank competes with local and international banks and other financial institutions.

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.

International Supervision and Regulation

Capital adequacy for Canadian banks is regulated by the Office of the Superintendent of Financial Institutions, Canada ("OSFI") and subject to the revised capital adequacy requirements as published by the Basel Committee on Banking Supervision (BCBS) and 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" 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 SEC, effective November 1, 2021, regulates the Bank's security-based swaps dealer business 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. Provisions of the Federal Reserve Act place certain limitations and restrictions on the transactions that the Bank's U.S. branch and agency can engage in with affiliates of the Bank.

The Bank, as a non-U.S. bank with U.S. operations, is required by U.S. anti-money laundering laws, 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.

[1] Visit webpage at https://www.scotiabank.com/ca/en/about/investors-shareholders/regulatory-disclosures/canadian-bank-resolution-powers-including-bail-in.html.

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 Bank is subject to the enhanced prudential standards and early remediation requirements of sections 165 (implemented by Regulation YY) and 166 of the Dodd-Frank Act (the "FBO Rule") for bank holding companies and foreign banking organizations. 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. The Bank is not currently required to form a U.S. intermediate holding company under the FBO Rule. In October 2019, the Federal Reserve finalized its rules to further tailor the regulatory framework for enhanced prudential standards and the U.S. Basel III capital and liquidity requirements applicable to domestic banking organizations and foreign banking organizations (FBOs), with which the Bank is complying.

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 shareholder Scotia Peru Holdings S.A.

Chile

Scotiabank Chile ("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 Financial Markets Commission (CMF), 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 CMF, according to their respective business lines.

Colombia

Scotiabank Colpatria S.A., 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 S.A. 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 other regulatory developments facing the Bank are described on pages 114 to 116 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 Environment, Social and Governance (ESG) Report, which provides details of the Bank's priorities and performance related to environmental, social and governance policies and strategies. ESG reporting can be found on the ESG Publications page within the Responsibility and Impact section of the Bank's website at https://www.scotiabank.com/sustainability.

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 payment of dividends and retirement of shares

Under the Bank Act, the Bank is prohibited from declaring any dividends on its common or preferred shares or redeeming, purchasing or otherwise retiring such shares when the Bank is, or would be placed by such a declaration or retirement, in contravention of the capital adequacy, liquidity or any other regulatory directives issued under the Bank Act.

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 until such distributions are made in full or the twelfth month following the non-payment of such distributions. Similarly, should the Bank fail to declare regular dividends on any of its directly issued and outstanding preferred or common shares, cash distributions will also not be made on any of the Scotiabank Trust Securities.

In the event that distributions are not paid in full on the Bank's Subordinated Additional Tier 1 Capital Notes (NVCC), including those issued as recourse assets in respect of LRCNs to Scotiabank LRCN Trust where the trustee has not waived such distributions or no longer holds the respective LRCN AT1 Capital Notes (defined below), 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.

In the event that dividends to which preferred shareholders are then entitled have not been paid or sufficient funds have not been set aside to do so, the Bank has undertaken not to declare dividends on its common shares or redeem, purchase or otherwise retire its common shares.

On March 13, 2020, OSFI advised federally regulated deposit taking institutions to suspend buybacks and increases to dividends in respect of its common shares as part of COVID-19 measures. On November 4, 2021, OSFI removed the COVID-19 related restrictions and advised that such institutions may increase regular dividends and, subject to approval, repurchase common shares.

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

Dividend Payments

In fiscal 2022, the Bank's actual common share dividend payout ratio was 50.3%, compared to 46.5% in 2021. The Bank has declared and paid the following dividends on its common shares and preferred shares over the past three completed financial years:

	2022	2021	2020
Common Shares	$ 4.06	$3.600000	$3.600000
Series 30[1]			$0.227500
Series 31[1]		$0.331828	
Series 32[2]		$0.138829	$0.515752
Series 33[2]		$0.100614	$0.579323
Series 34[3]		$0.687500	$1.375000
Series 36[4]		$1.031250	$1.375000
Series 38[5]	$0.303125	$1.212500	$1.212500
Series 40	$1.212500	$1.212500	$1.212500

(1) On April 26, 2020, the Bank redeemed all of its issued and outstanding Preferred Shares, Series 30 and 31
(2) On February 2, 2021, the Bank redeemed all of its issued and outstanding Preferred Shares, Series 32 and Series 33
(3) On April 26, 2021, the Bank redeemed all of its issued and outstanding Preferred Shares, Series 34
(4) On July 26, 2021, the Bank redeemed all of its issued and outstanding Preferred Shares, Series 36
(5) On January 27, 2022, the Bank redeemed all of its issued and outstanding Preferred Shares, Series 38

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 54 to 62 of the MD&A and notes 21 and 24 of the consolidated financial statements for the year ended October 31, 2022. 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 1,191,375,095 common shares were issued and outstanding as at October 31, 2022.

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.

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.

For information on the Bank's normal course issuer bid, see note 24 to the Bank's consolidated financial statements for the year ended October 31, 2022, which is incorporated herein by reference.

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, 2022, Non-cumulative Preferred Shares, Series 40 were outstanding. In addition, Non-cumulative Preferred Shares, Series 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. Preferred Shares, Series 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 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 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 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. Subject to the provisions of the Bank Act, 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, as determined to be advisable, 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 (a) US$1.25 billion 4.650% Fixed to Floating Rate Non-Cumulative Subordinated AT1 Capital Notes (NVCC) ("2017 AT1 Capital Notes"), (b) US$1.25 billion 4.900% Fixed Rate Resetting Perpetual Subordinated AT1 Capital Notes (NVCC) ("4.900% AT1 Capital Notes"), (c) $1.25 billion 3.70% Fixed Rate Resetting Limited Recourse Capital Notes, Series 1 (NVCC) ("3.70% LRCNs"), (d) $1.25 billion 3.70% Fixed Rate Resetting Perpetual Subordinated AT1 Capital Notes (NVCC) ("3.70% AT1 Capital Notes"), (e) US$600 million 3.625% Fixed Rate Resetting Limited Recourse Capital Notes, Series 2 (NVCC) ("3.625% LRCNs"), (f) US$600 million 3.625% Fixed Rate Resetting Perpetual Subordinated AT1 Capital Notes (NVCC) ("3.625% AT1 Capital Notes"), (g) $1.5 billion 7.023% Fixed Rate Resetting Limited Recourse Capital Notes, Series 3 (NVCC) ("7.023% LRCNs"), (h) $1.5 billion 7.023% Fixed Rate Resetting Perpetual Subordinated AT1 Capital Notes (NVCC) ("7.023% AT1 Capital Notes"), (i) US$750 million 8.625% Fixed Rate Resetting Limited Recourse Capital Notes, Series 4 (NVCC) ("8.625% LRCNs") and (j) US$750 million 8.625% Fixed Rate Resetting Perpetual Subordinated AT1 Capital Notes (NVCC) ("8.625% AT1 Capital Notes", and together with the 2017 AT1 Capital Notes, the 4.900% AT1 Capital Notes, the 3.70% LRCNs, the 3.70% AT1 Capital Notes, the 3.625% LRCNs, the 3.625% AT1 Capital Notes, the 7.023% LRCNs, the 7.023% AT1 Capital Notes and the 8.625% LRCNs, the "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, 2022.

The Subordinated Capital Notes are direct unsecured obligations of the Bank and rank pari passu with each other and subordinate to all of the Bank's 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 constitute subordinated indebtedness for the purposes of the Bank Act. In the event of the Bank's insolvency or winding-up (i) a Recourse Event (as defined below) will have occurred and pursuant to the limited recourse feature described below, an investment in the 3.70% LRCNs, the 3.625% LRCNs, the 7.023% LRCNs and the 8.625% LRCNs (collectively, the "LRCNs"), will become an investment in the corresponding 3.70% AT1 Capital Notes, 3.625% AT1 Capital Notes, 7.023% AT1 Capital Notes and 8.625% AT1 Capital Notes, respectively, and will be subject to the subordination provisions of such notes, and (ii) the 2017 AT1 Capital Notes, the 4.900% AT1 Capital Notes, the 3.70% AT1 Capital Notes, the 3.625% AT1 Capital Notes, the 7.023% AT1 Capital Notes and the 8.625% AT1 Capital Notes (collectively, the "AT1 Capital Notes") will rank ahead of the Bank's common shares and Preferred Shares.

The AT1 Capital Notes, include 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 2017 AT1 Capital Notes was payable semi-annually in arrears for the initial five year periods which ended on October 12, 2022. The interest now accrues at a floating rate, resets quarterly and is payable quarterly. Interest on each of the 4.900% AT1 Capital Notes, the 3.70% LRCNs, the 3.70% AT1 Capital Notes, the 3.625% LRCNs, the 3.625% AT1 Capital Notes, the 7.023% LRCNs, the 7.023% AT1 Capital Notes, the 8.625% LRCNs and the 8.625% AT1 Capital Notes is payable quarterly in arrears at a fixed rate for the initial five years and thereafter, interest will reset every five years and accrue at a fixed rate. While interest on the AT1 Capital Notes is payable on a quarterly basis, the Bank may, at its discretion, with prior notice, cancel the interest payments on the AT1 Capital Notes. 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 shares until the month commencing after the Bank resumes full interest payments on the AT1 Capital Notes, unless such interest has been waived by the note holders.

Interest will be due and payable on the AT1 Capital Notes 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 (i) at any time in respect of the 2017 AT1 Capital Notes and 4.900% AT1 Capital Notes, and (ii) at any time while the 3.70% AT1 Capital Notes, the 3.625% AT1 Capital Notes, the 7.023% AT1 Capital Notes and the 8.625% AT1 Capital Notes are no longer held by the LRT Trustee (defined below), and for any reason to cancel (in whole or in part), with notice to the holders of the AT1 Capital Notes, any interest payment that would otherwise be payable on any interest payment date. As a result, the holder of AT1 Capital Notes 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.

Interest payments on each of the 3.70% LRCNs, the 3.625% LRCNs, the 7.023% LRCNs and the 8.625% LRCNs are non-deferrable, however, non-payment in cash of interest that is not cured within 5 business days results in a Recourse Event. Upon a Recourse Event, the holders of such limited recourse capital notes will receive the 3.70% AT1 Capital Notes, the 3.625% AT1 Capital Notes, the 7.023% AT1 Capital Notes or the 8.625% AT1 Capital Notes, respectively.

Maturity and Redemption

The LRCNs have a stated maturity. The AT1 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 AT1 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 the sole discretion of the Bank five years after their issuance and every quarter or five years, as applicable, thereafter. The Subordinated Capital Notes are also redeemable following certain regulatory or tax events, in accordance with their terms. All redemptions are subject to regulatory consent. For more details, see note 24 of the consolidated financial statements for the year ended October 31, 2022.

Limited Recourse

The 3.70% AT1 Capital Notes, the 3.625% AT1 Capital Notes, the 7.023% AT1 Capital Notes and the 8.625% AT1 Capital Notes (collectively, the “LRCN AT1 Capital Notes”) were issued by the Bank in connection with the Bank’s concurrent issuance of the 3.70% LRCNs, the 3.625% LRCNs, the 7.023% LRCNs and the 8.625% LRCNs, respectively. The LRCN AT1 Capital Notes are held by Computershare Trust Company of Canada as trustee (the “LRT Trustee”) for Scotiabank LRCN Trust (the “Limited Recourse Trust”) for the benefit of the holders of corresponding LRCNs.

In the event of the occurrence of certain recourse events (each, a “Recourse Event”), which include (a) the non-payment in cash by the Bank of the principal amount of the LRCNs, together with any accrued and unpaid interest, on the maturity date, (b) the non-payment in cash by the Bank of the redemption price for the LRCNs when due, (c) the non-payment in cash of interest for the LRCNs when due which is not cured within 5 business days, (d) an event of default (i.e. bankruptcy, insolvency, or liquidation of the Bank), or (e) a non-viability contingent capital trigger event, the trustee of the Limited Recourse Trust will deliver to holders of LRCNs their proportionate share of the assets then held by the Limited Recourse Trust, which will, except in limited circumstances, consist of the LRCN AT1 Capital Notes (other than in the case of a non-viability contingent capital trigger event, in which case such assets will be the common shares issued upon conversion of the related LRCN AT1 Capital Notes), in each case in full satisfaction of the Bank’s obligations under the LRCNs.

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.

If at any time the Bank repurchases for cancellation the LRCNs, then the Bank shall, subject to regulatory consent, redeem such aggregate principal amount of the related LRCN AT1 Capital Notes that is equal to the aggregate principal amount of LRCNs purchased for cancellation by the Bank.

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. None of a default in the performance of any covenant contained in a trust indenture relating to the Subordinated Capital Notes, 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) or an NVCC automatic conversion upon the occurrence of a trigger event will constitute an event of default (although the non-payment by the Bank of the principal amount, together with any accrued and unpaid interest, on their maturity date, the non-payment in cash by the Bank of the redemption price when due, and a non-viability contingent capital trigger event will constitute a recourse event for the Limited Recourse Capital Notes).

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 to 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 credit ratings and outlook that the rating agencies assign to the Bank are based on their own views and methodologies. 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 Capital Notes and Tier 1 Capital.

	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 (hyb)	4 of 9	BBB+	4 of 10	A	3 of 10	A(low)	3 of 10
Subordinated additional tier 1 capital notes (NVCC) [4]	Baa3 (hyb)	4 of 9	BBB-	3 of 9	BBB+	4 of 10	BBB (high)	4 of 10
Limited Recourse Capital Notes (NVCC) [4]	Baa3 (hyb)	4 of 9	BBB-	3 of 9	BBB+	4 of 10	BBB (high)	4 of 10
Non-cumulative Preferred Shares (NVCC) [4]	Baa3 (hyb)	4 of 9	BBB-/P-2 (low) [5]	3 of 9 / 2 of 8	BBB+	4 of 10	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 April 18, 2022, DBRS affirmed the Bank's ratings and maintained the Outlook at Stable.
On July 11, 2022, Fitch affirmed the Bank's ratings and revised the Outlook to Stable.
On August 10, 2022, S&P affirmed the Bank's ratings and maintained the Outlook at Stable.
On October 6, 2022, Moody's affirmed the Bank's ratings and maintained the Outlook at Stable.

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 29, 2022 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 symbol "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 UK Listing Authority, Singapore Stock Exchange, Swiss Stock Exchange and Taiwan 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 38[1]	Series 40
November 2021			
-High Price ($)	$ 83.99	$25.28	$25.75
-Low Price ($)	$ 79.61	$25.21	$25.36
-Volume ('000)	96,699	612	294
December 2021			
-High Price ($)	$ 91.77	$25.39	$25.90
-Low Price ($)	$ 80.76	$24.99	$25.23
-Volume ('000)	138,700	922	377
January 2022			
-High Price ($)	$ 93.34	$25.00	$25.84
-Low Price ($)	$ 87.18	$24.98	$25.35
-Volume ('000)	136,680	1,085	233
February 2022			
-High Price ($)	$ 95.00		$25.94
-Low Price ($)	$ 87.47		$24.77
-Volume ('000)	86,979		480
March 2022			
-High Price ($)	$ 94.33		$25.25
-Low Price ($)	$ 89.50		$24.75
-Volume ('000)	155,679		290
April 2022			
-High Price ($)	$ 90.29		$25.00
-Low Price ($)	$ 81.25		$22.25
-Volume ('000)	146,436		284
May 2022			
-High Price ($)	$ 85.97		$24.83
-Low Price ($)	$ 79.28		$23.00
-Volume ('000)	86,672		323
June 2022			
-High Price ($)	$ 86.22		$25.35
-Low Price ($)	$ 75.03		$23.38
-Volume ('000)	158,956		231
July 2022			
-High Price ($)	$ 78.39		$24.79
-Low Price ($)	$ 71.21		$23.51
-Volume ('000)	119,430		482
August 2022			
-High Price ($)	$ 81.98		$24.98
-Low Price ($)	$ 72.56		$24.36
-Volume ('000)	98,046		340
September 2022			
-High Price ($)	$ 74.25		$24.68
-Low Price ($)	$ 65.07		$21.96
-Volume ('000)	182,595		217
October 2022			
-High Price ($)	$ 67.72		$22.52
-Low Price ($)	$ 63.17		$20.73
-Volume ('000)	158,921		259

(1) Redeemed on January 27, 2022

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 one or more indices, exchange traded funds or a notional basket of equities or other securities or combination of any of the foregoing. For information about the Bank's issuance of subordinated indebtedness and other equity instruments since October 31,

2021, see notes 21 and 24 to the Bank's consolidated financial statements for the year ended October 31, 2022, which are 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 29, 2022. 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 2023 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 HCOB – Chair	Corporate Director and a former senior partner of McKinsey & Company, an international consulting firm
Guillermo E. Babatz Mexico City, Mexico (Director since January 28, 2014)	HCOB RC – Chair	Managing Partner of Atik Capital, S.C., an advisory firm that specializes in structuring financial solutions for its clients
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
Daniel (Don) H. Callahan Fairfield, Connecticut, U.S.A. (Director since June 15, 2021)	CGC RC	Non-Executive Chairman of TIME USA LLC, and a Corporate Director
W. Dave Dowrich Brooklyn, NY, U.S.A (Director since June 1, 2022)	ACRC RC	Senior Executive Vice President and Chief Financial Officer of Teachers Insurance and Annuity Association of America – College Retirement Equities Fund (TIAA)
Lynn K. Patterson Toronto, Ontario, Canada (Director since September 1, 2020)	ACRC RC	Corporate Director and served as Deputy Governor of the Bank of Canada from May 2014 until her retirement in July 2019
Michael D. Penner London, United Kingdom (Director since June 26, 2017)	ACRC CGC	Corporate Director and an Operating Partner of Partners Group AG, a Swiss-based global private equity firm. Through this role with Partners Group AG, Mr. Penner serves as the Chairman of Partners Group Canada, as well as several portfolio companies including United States Infrastructure Corporation, Enfragen Renewable Energy, and Careismatic Brands, Inc., a medical apparel company
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 HCOB	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

Name and Place of Residence	Board Committee Memberships	Principal Occupation
Aaron W. Regent Toronto, Ontario, Canada (Director since April 9, 2013)	ACRC CGC HCOB RC	Chair of the Board of the Bank and Founder, Chairman and Chief Executive Officer of Magris Performance Materials Inc., a leading North American based industrial minerals company
Calin Rovinescu Toronto, Ontario, Canada (Director since November 1, 2020)	CGC–Chair HCOB	Corporate Director, venture capital investor and senior advisor to several corporations. He served as President and Chief Executive Officer of Air Canada from April 2009 until his retirement on February 15, 2021
Susan L. Segal Roxbury, Connecticut, U.S.A. (Director since December 2, 2011)	ACRC RC	President and Chief Executive Officer of the Americas Society, an organization dedicated to education, debate and dialogue in the Americas and Council of the Americas, a business organization whose members share a common interest in the western hemisphere
L. Scott Thomson West Vancouver, British Columbia, Canada (Director since April 12, 2016)	None	Former 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 CGC	Corporate Director and the former Senior Managing Director and Chief Financial Officer of Canada Pension Plan (CPP) Investment Board having retired in July 2017

Notes:
ACRC – Audit and Conduct Review Committee
CGC – Corporate Governance Committee
HCOB – Human Capital and Compensation 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: Michael D. Penner, who prior to November 2018, was Chairman of the Board of Directors of Hydro-Québec;W. Dave Dorwich, who prior to joining TIAA in 2021, was Senior Executive Vice President and Chief Financial Officer of Prudential Financial's International Businesses, and prior to Prudential Financial, held several executive positions with AIG from 2013 to 2020 in Japan and the U.S., including the role of Chief Financial Officer of AIG Japan and Asia Pacific; Lynn K. Patterson, who was Deputy Governor of the Bank of Canada until her retirement in July 2019; Benita M. Warmbold, who prior to July 2017, was Senior Managing Director and Chief Financial Officer of the Canada Pension Plan Investment Board; and Daniel (Don) H. Callahan, who prior to December 2018, was Chief Administrative Officer and Global Head of Operations, Technology and Shared Services at Citigroup**.**

Brian Porter and L. Scott Thomson are non-independent. Brian Porter is President and Chief Executive Officer of the Bank. L. Scott Thomson has been appointed incoming President for the Bank effective December 1, 2022 and will assume the role of President and CEO for the Bank on February 1, 2023.

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 29, 2022:

Name and Principal Occupation	Place of Residence
Brian J. Porter President and Chief Executive Officer	Toronto, Ontario
Rajagopal Viswanathan Group Head and Chief Financial Officer	Oakville, Ontario
Ignacio "Nacho" Deschamps Group Head, International Banking and Digital Transformation	Toronto, Ontario
Nicole Frew Executive Vice President and Chief Compliance Officer	Toronto, Ontario
Glen Gowland Group Head, Global Wealth Management	Toronto, Ontario
Jake Lawrence Chief Executive Officer and Group Head, Global Banking and Markets	Toronto, Ontario
Barbara F. Mason Group Head and Chief Human Resources Officer	Toronto, Ontario
James Neate President and Group Head, Corporate and Investment Banking	Mississauga, Ontario
Dan Rees Group Head, Canadian Banking	Toronto, Ontario
Philip Thomas Chief Risk Officer	Cobourg, Ontario
Michael Zerbs Group Head, Technology & Operations	Markham, Ontario
Ian Arellano Executive Vice President and General Counsel	Toronto, Ontario
Anique Asher Executive Vice President, Finance and Strategy	Etobicoke, Ontario
Stephen Bagnarol Executive Vice President, Canadian Business Banking	Thornhill, Ontario
Paul Baroni Executive Vice President & Chief Auditor	Toronto, Ontario
Alex Besharat Executive Vice President, Canadian Wealth Management	Toronto, Ontario
Tracy Bryan Executive Vice President, Global Operations	Whitby, Ontario
Stuart Davis Executive Vice President, Financial Crimes Risk Management & Group Chief Anti-Money Laundering Officer	Toronto, Ontario
John Doig Executive Vice President, Retail Sales	Etobicoke, Ontario
Loretta Marcoccia Executive Vice President & Chief Operating Officer, Global Banking and Markets	Etobicoke, Ontario
Diego Masola Executive Vice President and Country Head, Chile	Santiago, Chile
Gillian Riley Executive Vice President, President & CEO, Tangerine	Toronto, Ontario
Shawn Rose Executive Vice President and Chief Technology Officer	California, U.S.A.

Name and Principal Occupation	Place of Residence
Adrián Otero Rosiles Executive Vice President and Country Head, Mexico	Mexico City, Mexico
Francisco Sardon de Taboada Executive Vice President and Country Head, Peru	Lima, Peru
Anya M. Schnoor Executive Vice President, Caribbean, Central America and Uruguay	Toronto, Ontario
Kevin Teslyk Executive Vice President and Chief Operating Officer, Canadian Banking	Oakville, Ontario
Maria Theofilaktidis Executive Vice-President, Finance	Toronto, Ontario
Martin Weeks Executive Vice President and Group Treasurer	Oakville, Ontario
Terri-Lee Weeks Executive Vice President, Retail Customer	Toronto, Ontario

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: Adrián Otero Rosiles, who prior to February 2019, was Head of Wholesale Banking and Head of Investment Banking of BBVA Bancomer, and Terri-Lee Weeks, who prior to September 2021, was Senior Vice President, Personal Savings & Investments, Royal Bank of Canada.

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.

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.[2]

For more details, see note 23 of the consolidated financial statements for the year ended October 31, 2022.

The Bank, through its Peruvian subsidiary, is engaged in legal actions related to certain value-added tax assessed amounts and associated interest totaling $165 million, which arose from certain client transactions which occurred prior to the Bank's acquisition of the subsidiary. The legal action in Peru related to the original assessed amount continues. In November 2021, the Peruvian Constitutional Court dismissed the matter relating to the accrued interest for procedural reasons. With respect to this interest component, in October 2022, the Bank filed a request for arbitration against the Republic of Peru before the International Centre for the Settlement of Investment Disputes, pursuant to the provisions of the Canada-Peru Free Trade Agreement. The claim arises out of the Constitutional Court of Peru's inequitable treatment of Scotiabank Peru's rights in breach of the Canada-Peru Free Trade Agreement. The Bank is confident that it will be successful in these matters and intends to continue to defend its position. Accordingly, no amounts have been accrued in the consolidated financial statements.

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 has made significant enhancements to its BSA/AML and sanctions program.

[2] 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.

In the prior year, the Bank recorded settlement and litigation provisions in the amount of $62 million in connection with the Bank's former metals business. These provisions were recorded in the Other operating segment.

On August 19, 2020, the Bank entered into a Deferred Prosecution Agreement ("DPA") with the U.S. Department of Justice (the "DOJ"). Additionally, the Commodity Futures Trading Commission (the "CFTC") issued three separate orders against the Bank (collectively, the "Orders"). The DPA and the Orders (together, the "Resolutions") resolve the DOJ's and CFTC's investigations into the Bank's activities and trading practices in the metals markets and related conduct as well as pre-trade mid-market marks and related swap dealer compliance issues.

Under the terms of the Resolutions, the Bank made aggregate payments to the DOJ and CFTC of approximately $127.5 million (USD) and has agreed to retain an independent compliance monitor, which the Bank engaged on April 1, 2021. Under one of the orders, the CFTC will defer proceedings to suspend or revoke the Bank's provisional registration as a swap dealer subject to the Bank's implementation of a remediation plan, among other conditions, which the Bank is carrying out under the oversight of the independent compliance monitor, which commenced its engagement in April 2021, and which is expected to last three years under the terms of the Resolutions.

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.

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., 150 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 relevant rules and related interpretations prescribed by the relevant professional bodies in Canada 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 Board of Directors section.

The following directors are members of the Audit and Conduct Review Committee as of November 29, 2022: Una M. Power (Chair and financial expert), Scott B. Bonham, W. Dave Dowrich (financial expert), Lynn K. Patterson, Michael D. Penner, Aaron W. Regent (financial expert), Susan Segal and Benita Warmbold (financial expert). 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 Una M. Power, W. Dave Dowrich, Aaron W. Regent 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 a 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. 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 an M.B.A. from Harvard Business School.

W. Dave Dowrich – Mr. Dowrich is Senior Executive Vice President and Chief Financial Officer of Teachers Insurance and Annuity Association of America - College Retirement Equities Fund (TIAA). Prior to joining TIAA in 2021, Mr. Dowrich held a similar role for Prudential Financial's International Businesses, based in Tokyo, Japan. Prior to Prudential Financial, Mr. Dowrich held several executive positions with AIG from 2013 to 2020 in Japan and the U.S, including the role of Chief Financial Officer of AIG Japan and Asia Pacific. Previously, Mr. Dowrich held senior roles in investment banking at Goldman Sachs and Credit Suisse. He began his career as a pension consulting actuary in Toronto, Ontario. Mr. Dowrich has a B.Sc. (in actuarial science and applied statistics) from the University of Toronto and an M.B.A. (in finance) from the Wharton School of the University of Pennsylvania. He is a Fellow of the Society of Actuaries, an Associate of the Canadian Institute of Actuaries and a Member of the American Academy of Actuaries.

Lynn K. Patterson – Ms. Patterson is a corporate director and served as Deputy Governor of the Bank of Canada ("BoC") from May 2014 until her retirement from the BoC in July 2019. In this capacity, she was one of two deputy governors responsible for overseeing the BoC's analysis and activities promoting a stable and efficient financial system. Prior to this, Ms. Patterson served as Special Adviser to the Governor and Senior Representative (Financial Markets) at the BoC's Toronto Regional Office. Previous to her time at the BoC, Ms. Patterson was President and Country Head for Bank of America Merrill Lynch Canada. She is a recipient of the Diamond Jubilee Medal as a builder and innovator in Canada's investment industry. Ms. Patterson received an honours degree in Business Administration from the University of Western Ontario and is a Chartered Financial Analyst.

Michael D. Penner – Mr. Penner is a corporate director and an Operating Partner of Partners Group AG, a Swiss-based global private equity firm. In this capacity, he serves as the Chairman of Partners Group Canada, as well as several portfolio companies including United States Infrastructure Corporation, Enfragen Renewable Energy, and Careismatic Brands, Inc., a medical apparel company. Mr. Penner was Chairman of the Board of Directors of Hydro-Quebec from 2014 to 2018. 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 was instrumental in establishing the multi-disciplinary "Michael D. Penner Initiative on ESG" at the Universite de Montreal. He has also served on the Board of Directors of ICD Quebec, Les Grands Ballets Canadiens de Montreal and Selwyn House School. Mr. Penner holds a Bachelor of Arts degree from McGill University and a Juris Doctor from Hofstra University in New York.

Aaron W. Regent – Aaron Regent is Chair of the Board of Scotiabank. He is the Founder, Chairman and Chief Executive Officer of Magris Performance Materials Inc., a leading North American based industrial minerals company. He was President and Chief Executive Officer of Barrick Gold Corporation from January 2009 to June 2012. Previously, Mr. Regent was Senior Managing Partner of Brookfield Asset Management and Co-Chief Executive Officer of the Brookfield Infrastructure Group, an asset management company, and President and Chief Executive Officer of Falconbridge Limited. Mr. Regent holds a B.A. from the University of Western Ontario and is a chartered accountant and a Fellow of CPA Ontario.

Susan L. Segal – Susan Segal was elected President and Chief Executive Officer of the Americas Society, an organization dedicated to education, debate and dialogue in the Americas, and Council of the Americas, a business organization whose members share a common interest in the western hemisphere, in August 2003. Previously, she was a banker for over 25 years with JPM Chase and its predecessor banks. Ms. Segal received a B.A. from Sarah Lawrence College and a M.B.A. from Columbia University. In 1999, she was awarded the Order of Bernardo O'Higgins, Grado de Gran Oficial in Chile. In 2009, President Alvaro Uribe of Colombia honored her with the Cruz de San Carlos award and in September 2012, Mexican President Calderón awarded her with the Aguila Azteca, the highest award given to a foreigner. In 2013, the North

American-Chilean Chamber of Commerce recognized her as the Honorary Chilean of the Year. In 2018, Ms. Segal was awarded Peru's Order of "Merit for Distinguished Services" in the rank of Grand Official on behalf of President Martín Vizcarra. In 2022, Ms. Segal was awarded *La Orden de Boyaca*, Colombia's highest peacetime decoration, by President Iván Duque and named one of "The 500 Most Influential People in Latin America" by Bloomberg.

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 having retired in July 2017. 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 Chair 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 80 on page 125 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 a regular 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/canadian-bank-resolution-powers-including-bail-in.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, 2022. A copy of such documents may be obtained upon request from the Corporate Secretary's Department, at Scotia Plaza, 44 King Street West, Toronto, Ontario, M5H 1H1 Tel: (416) 866-3672. E-mail: corporate.secretary@scotiabank.com.

Schedule A

Principal subsidiaries [1]

The following table presents certain 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 2022	2021
Canadian			
1832 Asset Management L.P.	Toronto, Ontario	$ 3,785	$ 2,680
BNS Investments Inc.	Toronto, Ontario	15,750	15,200
Montreal Trust Company of Canada	Montreal, Quebec		
The Bank of Nova Scotia Trust Company	Toronto, Ontario	214	185
National Trust Company	Stratford, Ontario	374	366
Roynat Inc.	Calgary, Alberta	594	518
Scotia Capital Inc.	Toronto, Ontario	3,215	2,818
Scotia Dealer Advantage Inc.	Burnaby, British Columbia	867	729
Scotia Mortgage Corporation	Toronto, Ontario	810	750
Scotia Securities Inc.	Toronto, Ontario	63	53
Tangerine Bank	Toronto, Ontario	3,827	3,405
Jarislowsky, Fraser Limited	Montreal, Quebec	988	1,027
MD Financial Management Inc.	Ottawa, Ontario	2,781	2,761
International			
Scotiabank Colpatria S.A. (51%)	Bogota, Colombia	842	995
BNS International (Bahamas) Limited	Nassau, Bahamas	17,180	17,543
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 (Ireland) Designated Activity Company	Dublin, Ireland		
Grupo Financiero Scotiabank Inverlat, S.A. de C.V. (97.4%)	Mexico City, Mexico	5,960	4,714
Nova Scotia Inversiones Limitada	Santiago, Chile	6,114	5,173
Scotiabank Chile S.A. (99.79%)	Santiago, Chile		
Scotia Holdings (US) Inc. [2]	New York, New York		
Scotia Capital (USA) Inc. [2][3]	New York, New York		
Scotiabank Brasil S.A. Banco Multiplo	Sao Paulo, Brazil	788	280
Scotiabank Caribbean Holdings Ltd.	Bridgetown, Barbados	1,550	1,630
Scotia Group Jamaica Limited (71.8%)	Kingston, Jamaica		
The Bank of Nova Scotia Jamaica Limited	Kingston, Jamaica		
Scotiabank Trinidad and Tobago Limited (50.9%)	Port of Spain, Trinidad and Tobago		
Integra Properties Ltd, S.A. (formerly Scotiabank (Panama) S.A.)	Panama City, Panama		
Scotiabank Uruguay S.A.	Montevideo, Uruguay	478	440
Scotiabank Europe plc	London, United Kingdom	2,478	2,273
Scotia Peru Holdings S.A.	Lima Peru	4,961	4,277
Scotiabank Peru S.A.A. (99.31%)	Lima, Peru		
Profuturo AFP S.A.	Lima, Peru		
Scotiabank Republica Dominicana, S.A. – Banco Multiple (99.80%)	Santo Domingo, Dominican Republic	906	775
Scotiabank (Barbados) Limited	Bridgetown, Barbados	273	235

(1) The Bank (or immediate parent of an entity) owns 100% of the outstanding voting shares of each subsidiary unless otherwise noted.
(2) The carrying value of this subsidiary is included with that of its parent, BNS Investments Inc.
(3) 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

Definition of Credit Ratings

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 eleven months 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 firms.

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 (generally up to two years for investment grade and generally up to one year for speculative grade). 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 good 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

THE BANK OF NOVA SCOTIA

CHARTER

AUDIT AND CONDUCT REVIEW COMMITTEE OF THE BOARD OF DIRECTORS

The Audit and Conduct Review Committee of the Board of Directors (the "Committee") has the responsibilities and duties as outlined below and serves as the Bank's audit committee, conduct review committee and consumer protection committee:

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, 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, compliance 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 environmental, social and governance (ESG) disclosures, including climate-related disclosure, to be included in financial reporting as required by regulators or that may be required by law;
- 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 (Enterprise-wide), and carry out the Committee's responsibilities under the Bank's Whistleblower Policy (Enterprise-wide), as required.

Finance

- 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 risk appetite statement, 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 Capital and Compensation 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 Department 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.

Compliance

- approve the Compliance Risk Summary Framework;
- receive reports from management on the Bank's compliance with legal and regulatory requirements and the adequacy and effectiveness of the Bank's compliance controls, including:
  - review the annual and other periodic reports of Global Compliance; and
  - follow up with management on plans to remediate any deficiencies identified in reports and on any regulatory recommendations or findings, and discuss if weaknesses may exist elsewhere;
- meet, on its own or with the Board, with representatives of OSFI to discuss OSFI's supervisory results;
- meet with Bank management to review and discuss the Bank's response to OSFI's recommendations and suggestions pursuant to their supervisory activities;
- review any issues raised by Internal Audit that address the appropriateness and effectiveness of the Bank's Compliance Risk Summary Framework and management of significant compliance risks;
- oversee the Global Compliance Department, having regard to its independence, by:
  - reviewing and approving the appointment and/or removal of the Chief Compliance Officer;
  - annually reviewing and approving the mandate for the Chief Compliance Officer and the charter of the Global Compliance Department;
  - annually reviewing and approving the organizational structure of the Global Compliance Department;
  - annually reviewing and approving the Global Compliance Department's risk appetite statement, resources and budget;
  - annually assessing the effectiveness of the Chief Compliance Officer and the effectiveness of the Global Compliance Department, and annually approving the performance review of the Chief Compliance Officer, taking into consideration any regulatory findings with respect to the Global Compliance Department;
  - conveying its view to the Human Capital and Compensation Committee on the following matters:
    - the assessment of the effectiveness and performance review of the Chief Compliance Officer;

- considerations to be factored into the total compensation to be paid to the Chief Compliance Officer; and
- succession planning for the role of Chief Compliance Officer;

- with respect to the Security-Based Swap Dealer ("SBSD") Chief Compliance Officer:
  - reviewing and approving the appointment and/or removal of the SBSD Chief Compliance Officer;
  - reviewing annual reports from the SBSD Chief Compliance Officer; and
  - reviewing and approving the total compensation to be paid to the SBSD Chief Compliance Officer;
- overseeing that Global Compliance has unfettered access and a functional reporting line to the Committee;
- periodically requesting independent reviews of the Global Compliance Department, reviewing the results of such reviews and reporting such results to the Board; and
- overseeing that deficiencies identified related to Global Compliance 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 mandate 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 Human Capital and Compensation 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 unfettered access and 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, including the key audit matters and critical audit matters contained therein;
- 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;
- receive 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 and internal control over financial reporting;
    - as part of this review, the Committee should satisfy itself that the level of audit fees is commensurate with the scope of work undertaken in consideration of financial reporting risks;
- 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 quarterly 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;
    - the firm's internal procedures to ensure independence;
    - 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 of the Bank 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

- review the periodic reports on litigation matters;
- review such returns as specified by OSFI;
- review such other periodic disclosure documents as required by regulators or that may be required by law;
- 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, 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

   - conduct reviews, risk culture 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 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 or common-law partners of senior officers of the Bank on the security of mortgages of the principal residences of such spouses or common-law partners 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 common-law partners, 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 for restricting the use of confidential information;
7. Review and approve the Risk Culture & Conduct Risk Management Summary Framework;
8. Review and, if appropriate, recommend for Board approval any material changes to the Scotiabank Code of Conduct which includes the standards of 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 Scotiabank Code of Conduct, as appropriate;
9. Review reports from Global Compliance on compliance with the Scotiabank Code of Conduct and any instances of material deviation therefrom with corrective actions taken;
10. Review the annual letter of certification from the Chief Executive Officer on the Bank's compliance with the Scotiabank Code of Conduct;
11. Monitor the Bank's exposure to material risks relating to conduct, risk culture and anti-bribery and anti-corruption matters by reviewing the Bank's risk management practices including its identification, measurement, monitoring and assessment of these types of risks;
12. Review matters reported to the Committee included in the Chief Compliance Officer Report as it relates to the Enterprise Conduct, Risk Culture and Ethics programs, including anti-bribery and anti-corruption matters;
13. Review with management the results of their assessment of the Bank's risk culture, conduct risk and anti-bribery and anti-corruption risks, and their plans to remediate any material deficiencies identified; and
14. Monitor the procedures established by the Bank to mitigate conduct risk.

CONSUMER PROTECTION

F. Mandate

1. To perform such duties as are required by the Bank Act to be dealt with by a committee of the Board with respect to the Bank's procedures for complying with the consumer provisions, including Part XII.2 of the Bank Act and its associated regulations and any Financial Consumer Agency of Canada ("FCAC") guidance, as more fully described under the heading "Duties" below.
2. To perform such other duties as are required under the Bank Act or by OSFI or the FCAC, or as may from time to time be assigned by the Board.
3. To act as the consumer protection committee for any federally chartered Canadian financial institution beneficially owned by the Bank as determined by the Board.

G. Duties

1. Require Bank management to establish procedures for complying with the consumer provisions, including Part XII.2 of the Bank Act and its associated regulations and any FCAC guidance;

2. Review such procedures referred to in clause 1 above to determine whether they are appropriate to ensure that the Bank is complying with the consumer provisions;

3. Require Bank management to report at least annually to the Committee on the implementation of the procedures and on any other activities that the Bank carries out in relation to the protection of its customers.

COMMITTEE OPERATIONS

H. 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 Chair of the Committee shall review, for completeness, the Board's report to FCAC with respect to consumer protection 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.

I. Composition

Structure

The Committee shall consist of a minimum of three 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.

J. 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 Compliance 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 two members.

Delegation

The Committee may designate a sub-committee to review any matter within the Committee's mandate.

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 27, 2022.

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ENHANCED DISCLOSURE TASK FORCE (EDTF) RECOMMENDATIONS

The Enhanced Disclosure Task Force (EDTF) was established by the Financial Stability Board in May 2012 with the goal of developing fundamental disclosure principles. On October 29, 2012 the EDTF published its report, "Enhancing the Risk Disclosures of Banks", which sets forth recommendations around improving risk disclosures and identifies existing leading practice risk disclosures.

Below is the index of all these recommendations to facilitate easy reference in the Bank's annual report and other public disclosure documents available on www.scotiabank.com/investorrelations.

Reference Table for EDTF

			Pages		
Type of risk	Number	Disclosure	MD&A	Financial Statements	Supplementary Regulatory Capital Disclosures
General	1	The index of risks to which the business is exposed.	14		
	2	The Bank's risk to terminology, measures and key parameters.	74-78		
	3	Top and emerging risks, and the changes during the reporting period.	80-81, 85-91		
	4	Discussion on the regulatory development and plans to meet new regulatory ratios.	54-57, 99-102, 114-116		
Risk governance, risk management and business model	5	The Bank's Risk Governance structure.	72-74		
	6	Description of risk culture and procedures applied to support the culture.	74-78		
	7	Description of key risks from the Bank's business model.	79		
	8	Stress testing use within the Bank's risk governance and capital management.	75-76		
Capital Adequacy and risk-weighted assets	9	Pillar 1 capital requirements, and the impact for global systemically important banks.	54-57	206	3
	10	a) Regulatory capital components.	58		18-21
		b) Reconciliation of the accounting balance sheet to the regulatory balance sheet.			15-16
	11	Flow statement of the movements in regulatory capital since the previous reporting period, including changes in common equity tier 1, additional tier 1 and tier 2 capital.	59-60		74
	12	Discussion of targeted level of capital, and the plans on how to establish this.	54-57		
	13	Analysis of risk-weighted assets by risk type, business, and market risk RWAs.	63-67, 79, 123	176, 229	5, 34, 36-47, 59-61, 65, 77, 83
	14	Analysis of the capital requirements for each Basel asset class.	63-67	176, 223-229	13-14, 34-48, 58-61, 65, 70-73
	15	Tabulate credit risk in the Banking Book.	63-67	224	13-14, 34-48, 70-73
	16	Flow statements reconciling the movements in risk-weighted assets for each risk-weighted asset type.	63-67		49, 64, 76
	17	Discussion of Basel III Back-testing requirement including credit risk model performance and validation.	64-66		50-53, 81
Liquidity Funding	18	Analysis of the Bank's liquid assets.	97-102		
	19	Encumbered and unencumbered assets analyzed by balance sheet category.	99		
	20	Consolidated total assets, liabilities and off-balance sheet commitments analyzed by remaining contractual maturity at the balance sheet date.	103-105		
	21	Analysis of the Bank's sources of funding and a description of the Bank's funding strategy.	102-103		
Market Risk	22	Linkage of market risk measures for trading and non-trading portfolios and the balance sheet.	96		
	23	Discussion of significant trading and non-trading market risk factors.	92-97	228-229	
	24	Discussion of changes in period on period VaR results as well as VaR assumptions, limitations, backtesting and validation.	92-97	228-229	
	25	Other risk management techniques e.g. stress tests, stressed VaR, tail risk and market liquidity horizon.	92-97	229	
Credit Risk	26	Analysis of the aggregate credit risk exposures, including details of both personal and wholesale lending.	85-91, 117-123	186-187, 225-227	5, 34, 36-47, 59-61
	27	Discussion of the policies for identifying impaired loans, defining impairments and renegotiated loans, and explaining loan forbearance policies.		155-157, 187	
	28	Reconciliations of the opening and closing balances of impaired loans and impairment allowances during the year.	88, 117-118, 120, 121	187	31-32
	29	Analysis of counterparty credit risk that arises from derivative transactions.	83-84	174-177	82
	30	Discussion of credit risk mitigation, including collateral held for all sources of credit risk.	83-84, 89		
Other risks	31	Quantified measures of the management of operational risk.	67, 106		
	32	Discussion of publicly known risk items.	71		

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FORWARD LOOKING STATEMENTS

From time to time, our public communications 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 2022 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," "target," "project," "commit," "objective," and similar expressions of future or conditional verbs, such as "will," "may," "should," "would," "might," "can" and "could" and positive and negative variations thereof.

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; the possible effects on our business of war or terrorist actions and unforeseen consequences arising from such actions; 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, and the extent to which products or services previously sold by the Bank require the Bank to incur liabilities or absorb losses not contemplated at their origination; 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; climate change and other environmental and social risks, including sustainability that may arise, including from the Bank's business activities; the occurrence of natural and unnatural catastrophic events and claims resulting from such events; inflationary pressures; Canadian housing and household indebtedness; the emergence of widespread health emergencies or pandemics, including the magnitude and duration of the COVID-19 pandemic and its impact on the global economy, financial market conditions and the Bank's business, results of operations, financial condition and prospects; 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 2022 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 2022 Annual Report under the headings "Outlook", as updated by quarterly reports. The "Outlook" and "2023 Priorities" 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 29, 2022

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MANAGEMENT'S DISCUSSION & ANALYSIS

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, 2022. The MD&A should be read in conjunction with the Bank's 2022 Consolidated Financial Statements, including the Notes. This MD&A is dated November 29, 2022.

Additional information relating to the Bank, including the Bank's 2022 Annual Report, are available on the Bank's website at www.scotiabank.com. As well, the Bank's 2022 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 and ratios to assess its performance, as well as the performance of its operating segments. Some of these financial measures and ratios are presented on a non-GAAP basis and are not calculated in accordance with Generally Accepted Accounting Principles (GAAP), which are based on International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB), are not defined by GAAP and do not have standardized meanings and therefore might not be comparable to similar financial measures and ratios disclosed by other issuers. The Bank believes that non-GAAP measures and ratios are useful as they provide readers with a better understanding of how management assesses performance. These non-GAAP measures and ratios are used throughout this report and defined below.

Adjusted results and adjusted diluted earnings per share

The following table presents a reconciliation of GAAP reported financial results to non-GAAP adjusted financial results. Management considers both reported and adjusted results and measures useful in assessing underlying ongoing business performance. Adjusted results and measures remove certain specified items from revenue, non-interest expenses, income taxes and non-controlling interest. Presenting results on both a reported basis and adjusted basis allows readers to assess the impact of certain items on results for the periods presented, and to better assess results and trends excluding those items that may not be reflective of ongoing business performance. Net income and diluted earnings per share have been adjusted for the following:

1. **Amortization of acquisition-related intangible assets:**
   Costs of $71 million ($97 million pre-tax) (October 31, 2021 – $75 million ($103 million pre-tax)) relate to the amortization of intangible assets recognized upon the acquisition of businesses, excluding software, and are recorded in the Canadian Banking, International Banking and Global Wealth Management operating segments.

2. **Restructuring and other provisions:**
   In Q4 2022, the Bank recorded a restructuring charge of $66 million ($85 million pre-tax) primarily related to the strategic decision to realign the Global Banking and Markets businesses in Asia Pacific to focus on select banking and capital markets activities in the region. The charge also included reductions in Canadian and international technology employees, driven by ongoing technology modernization and digital transformation.

   In the prior year, the Bank recorded a restructuring charge of $93 million ($126 million pre-tax), substantially related to International Banking for the cost of reducing branches and full-time employees, driven by the accelerated customer adoption of digital channels and process automation. The Bank also recorded settlement and litigation provisions in the amount of $46 million ($62 million pre-tax) in connection with the Bank's former metals business.

   These charges were recorded in the Other operating segment.

3. **Support costs for the Scene+ loyalty program:**
   The Bank recorded costs of $98 million ($133 million pre-tax) to support the expansion of the Scene+ loyalty program to include Empire Company Limited as a partner. These committed costs relate to operational support, transition marketing and technology initiatives and were recognized as an expense in Q4 2022 in the Other operating segment.

4. **Net loss on divestitures and wind-down of operations:**
   In Q4 2022, the Bank sold its investments in associates in Venezuela and Thailand. Additionally, the Bank wound down its operations in India and Malaysia in relation to its realignment of the business in the Asia Pacific region. Collectively, the sale and wind-down of these entities resulted in a net loss of $340 million ($361 million pre-tax), of which $294 million ($315 million pre-tax) related to the reclassification of cumulative foreign currency translation losses net of hedges, from accumulated other comprehensive income to non-interest income in the Consolidated Statement of Income. This net loss was recorded in the Other operating segment. For further details on these transactions, please refer to Note 36 of the consolidated financial statements.

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

As at October 31 ($ millions)	2022	2021
Reported Results		
Net interest income	**$ 18,115**	$ 16,961
Non-interest income	**13,301**	14,291
Total revenue	**31,416**	31,252
Provision for credit losses	**1,382**	1,808
Non-interest expenses	**17,102**	16,618
Income before taxes	**12,932**	12,826
Income tax expense	**2,758**	2,871
Net income	**$ 10,174**	$ 9,955
Net income attributable to non-controlling interests in subsidiaries (NCI)	**258**	331
Net income attributable to equity holders	**9,916**	9,624
Net income attributable to preferred shareholders and other equity instrument holders	**260**	233
Net income attributable to common shareholders	**9,656**	9,391
Diluted earnings per share *(in dollars)*	**$ 8.02**	$ 7.70
Adjustments		
Adjusting items impacting non-interest income and total revenue (Pre-tax)		
Net loss on divestitures and wind-down of operations	**$ 361**	**$ –**
Adjusting items impacting non-interest expenses (Pre-tax)		
Amortization of acquisition-related intangible assets	**97**	103
Restructuring and other provisions	**85**	188
Support costs for the Scene+ loyalty program	**133**	–
Total non-interest expense adjusting items (Pre-tax)	**$ 315**	$ 291
Total impact of adjusting items on net income before taxes	**676**	291
Impact of adjusting items on income tax expense		
Net loss on divestitures and wind-down of operations	**(21)**	–
Amortization of acquisition-related intangible assets	**(26)**	(28)
Restructuring and other provisions	**(19)**	(49)
Support costs for the Scene+ loyalty program	**(35)**	–
Total impact of adjusting items on income tax expense	**(101)**	(77)
Total impact of adjusting items on net income	**575**	214
Impact of adjusting items on NCI related to restructuring and other provisions	**(1)**	(10)
Total impact of adjusting items on net income attributable to equity holders and common shareholders	**$ 574**	$ 204
Adjusted Results		
Net interest income	**$ 18,115**	$ 16,961
Non-interest income	**13,662**	14,291
Total revenue	**31,777**	31,252
Provision for credit losses	**1,382**	1,808
Non-interest expenses	**16,787**	16,327
Income before taxes	**13,608**	13,117
Income tax expense	**2,859**	2,948
Net income	**$ 10,749**	$ 10,169
Net income attributable to NCI	**259**	341
Net income attributable to equity holders	**10,490**	9,828
Net income attributable to preferred shareholders and other equity instrument holders	**260**	233
Net income attributable to common shareholders	**$ 10,230**	$ 9,595
Diluted earnings per share *(in dollars)*	**$ 8.50**	$ 7.87
Impact of adjustments on diluted earnings per share *(in dollars)*	**$ 0.48**	$ 0.17

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T1A **Reconciliation of reported and adjusted results by business line**

($ millions)	Canadian Banking	International Banking	Global Wealth Management	Global Banking and Markets	Other	Total
	For the year ended October 31, 2022 (1)					
Reported net income (loss)	**$ 4,763**	**$ 2,667**	**$ 1,565**	**$ 1,911**	**$ (732)**	**$ 10,174**
Net income attributable to non-controlling interests in subsidiaries (NCI)	**–**	**249**	**9**	**–**	**–**	**258**
Reported net income attributable to equity holders	**4,763**	**2,418**	**1,556**	**1,911**	**(732)**	**$ 9,916**
Reported net income attributable to preferred shareholders and other equity instrument holders	**6**	**6**	**3**	**4**	**241**	**$ 260**
Reported net income attributable to common shareholders	**$ 4,757**	**$ 2,412**	**$ 1,553**	**$ 1,907**	**$ (973)**	**$ 9,656**
Adjustments						
Adjusting items impacting non-interest income and total revenue (Pre-tax)						
Net loss on divestitures and wind-down of operations	**$ –**	**$ –**	**$ –**	**$ –**	**$ 361**	**$ 361**
Adjusting items impacting non-interest expenses (Pre-tax)						
Amortization of acquisition-related intangible assets	**22**	**39**	**36**	**–**	**–**	**97**
Restructuring and other provisions	**–**	**–**	**–**	**–**	**85**	**85**
Support costs for the Scene+ loyalty program	**–**	**–**	**–**	**–**	**133**	**133**
Total non-interest expenses adjustments (Pre-tax)	**22**	**39**	**36**	**–**	**218**	**315**
Total impact of adjusting items on net income before taxes	**22**	**39**	**36**	**–**	**579**	**676**
Total impact of adjusting items on income tax expense	**(6)**	**(11)**	**(9)**	**–**	**(75)**	**(101)**
Total impact of adjusting items on net income	**16**	**28**	**27**	**–**	**504**	**575**
Impact of adjusting items on NCI related to restructuring and other provisions	**–**	**–**	**–**	**–**	**(1)**	**(1)**
Total impact of adjusting items on net income attributable to equity holders and common shareholders	**16**	**28**	**27**	**–**	**503**	**574**
Adjusted net income (loss)	**$ 4,779**	**$ 2,695**	**$ 1,592**	**$ 1,911**	**$ (228)**	**$ 10,749**
Adjusted net income attributable to equity holders	**$ 4,779**	**$ 2,446**	**$ 1,583**	**$ 1,911**	**$ (229)**	**$ 10,490**
Adjusted net income attributable to common shareholders	**$ 4,773**	**$ 2,440**	**$ 1,580**	**$ 1,907**	**$ (470)**	**$ 10,230**

(1) Refer to Business Line Overview on page 37.

($ millions)	Canadian Banking	International Banking	Global Wealth Management	Global Banking and Markets	Other	Total
	For the year ended October 31, 2021 (1)					
Reported net income (loss)	$ 4,155	$ 2,155	$ 1,574	$ 2,075	$ (4)	$ 9,955
Net income attributable to non-controlling interests in subsidiaries (NCI)	–	332	9	–	(10)	331
Reported net income attributable to equity holders	4,155	1,823	1,565	2,075	6	9,624
Reported net income attributable to preferred shareholders and other equity instrument holders	20	21	11	15	166	233
Reported net income attributable to common shareholders	$ 4,135	$ 1,802	$ 1,554	$ 2,060	$ (160)	$ 9,391
Adjustments						
Adjusting items impacting non-interest expenses (Pre-tax)						
Amortization of acquisition-related intangible assets	$ 22	$ 45	$ 36	$ –	$ –	$ 103
Restructuring and other provisions	–	–	–	–	188	188
Total non-interest expenses adjustments (Pre-tax)	22	45	36	–	188	291
Total impact of adjusting items on net income before taxes	22	45	36	–	188	291
Total impact of adjusting items on income tax expense	(6)	(13)	(9)	–	(49)	(77)
Total impact of adjusting items on net income	16	32	27	–	139	214
Impact of adjusting items on NCI related to restructuring and other provisions	–	–	–	–	(10)	(10)
Total impact of adjusting items on net income attributable to equity holders and common shareholders	16	32	27	–	129	204
Adjusted net income (loss)	$ 4,171	$ 2,187	$ 1,601	$ 2,075	$ 135	$ 10,169
Adjusted net income attributable to equity holders	$ 4,171	$ 1,855	$ 1,592	$ 2,075	$ 135	$ 9,828
Adjusted net income attributable to common shareholders	$ 4,151	$ 1,834	$ 1,581	$ 2,060	$ (31)	$ 9,595

(1) Refer to Business Line Overview on page 37.

Constant Dollar

International Banking business segment results are analyzed on a constant dollar basis which is a non-GAAP measure. 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, adjusted and constant dollar results for International Banking for prior periods. The Bank believes that constant dollar is useful for readers to understand business performance without the impact of foreign currency translation and is used by management to assess the performance of the business segment. The tables below are computed on a basis that is different than the table "Impact of foreign currency translation" in Overview of Performance on page 26.

T2 Reconciliation of International Banking's reported and adjusted results and constant dollar results

For the year ended October 31 ($ millions)	2021		
(Taxable equivalent basis)	Reported results	Foreign exchange	Constant dollar results
Net interest income	$ 6,625	$ 147	$ 6,478
Non-interest income	2,993	119	2,874
Total revenue	9,618	266	9,352
Provision for credit losses	1,574	40	1,534
Non-interest expenses	5,254	105	5,149
Income tax expense	635	30	605
Net Income	$ 2,155	$ 91	$ 2,064
Net income attributable to non-controlling interest in subsidiaries	$ 332	$ 24	$ 308
Net income attributable to equity holders of the Bank	$ 1,823	$ 67	$ 1,756
Other measures			
Average assets ($ billions)	$ 194	$ 4	$ 190
Average liabilities ($ billions)	$ 149	$ 5	$ 144

For the year ended October 31 ($ millions)	2021		
(Taxable equivalent basis)	Adjusted results	Foreign exchange	Constant dollar adjusted results
Net interest income	$ 6,625	$ 147	$ 6,478
Non-interest income	2,993	119	2,874
Total revenue	9,618	266	9,352
Provision for credit losses	1,574	40	1,534
Non-interest expenses	5,209	102	5,107
Income tax expense	648	32	616
Net Income	$ 2,187	$ 92	$ 2,095
Net income attributable to non-controlling interest in subsidiaries	$ 332	$ 23	$ 309
Net income attributable to equity holders of the Bank	$ 1,855	$ 69	$ 1,786

Reconciliation of average total assets, core earning assets and core net interest income

Earning assets

Earning assets are defined as income generating assets which include deposits with financial institutions, trading assets, investment securities, investments in associates, securities borrowed or purchased under resale agreements, loans net of allowances, and customers' liability under acceptances.

Non-earning assets

Non-earning assets are defined as cash, precious metals, derivative financial instruments, property and equipment, goodwill and other intangible assets, deferred tax assets and other assets.

Core earning assets

Core earning assets are defined as interest-bearing deposits with financial institutions, investment securities and loans net of allowances. This is a non-GAAP measure. The Bank believes that this measure is useful for readers as it presents the main interest-generating assets of the personal and commercial businesses, and eliminates the impact of trading businesses.

Core net interest income

Core net interest income is defined as net interest income earned from core earning assets. This is a non-GAAP measure.

Net interest margin

Net interest margin is calculated as core net interest income for the business line divided by average core earning assets. Net interest margin is a non-GAAP ratio.

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T3 **Reconciliation of average total assets, average earning assets, average core earning assets and net interest margin by business line**

Consolidated Bank

For the year ended October 31 *(Unaudited) ($ millions)*	2022	2021
Average total assets - Reported(1)	**$ 1,281,708**	$ 1,157,213
Less: Non-earning assets	**107,536**	94,908
Average total earning assets(1)	**$ 1,174,172**	$ 1,062,305
Less:		
Trading assets	**138,390**	142,033
Securities purchased under resale agreements and securities borrowed	**140,557**	116,829
Other deductions	**62,531**	51,750
Average core earning assets(1)	**$ 832,694**	$ 751,693
Net Interest Income - Reported	**$ 18,115**	$ 16,961
Less: Non-core net interest income	**(185)**	190
Core net interest income	**$ 18,300**	$ 16,771
Net interest margin	**2.20%**	2.23%

(1) Average balances represent the average of daily balances for the period.

Canadian Banking

For the year ended October 31 *(Unaudited) ($ millions)*	2022	2021
Average total assets - Reported(1)	**$ 429,528**	$ 380,772
Less: Non-earning assets	**4,092**	4,102
Average total earning assets(1)	**$ 425,436**	$ 376,670
Less:		
Other deductions	**23,482**	17,382
Average core earning assets(1)	**$ 401,954**	$ 359,288
Net Interest Income - Reported	**$ 9,001**	$ 8,030
Less: Non-core net interest income	**–**	–
Core net interest income	**$ 9,001**	$ 8,030
Net interest margin	**2.24%**	2.23%

(1) Average balances represent the average of daily balances for the period.

International Banking

For the year ended October 31 *(Unaudited) ($ millions)*	2022	2021
Average total assets - Reported(1)	**$ 206,550**	$ 194,124
Less: Non-earning assets	**17,808**	15,218
Average total earning assets(1)	**$ 188,742**	$ 178,906
Less:		
Trading assets	**4,978**	5,812
Securities purchased under resale agreements and securities borrowed	**1,265**	–
Other deductions	**6,781**	6,581(2)
Average core earning assets(1)	**$ 175,718**	$ 166,513
Net Interest Income - Reported	**$ 6,900**	$ 6,625
Less: Non-core net interest income	**(66)**	50
Core net interest income	**$ 6,966**	$ 6,575
Net interest margin	**3.96%**	3.95%(2)

(1) Average balances represent the average of daily balances for the period.
(2) Prior period has been restated to reflect the deduction of non-interest bearing deposits with financial institutions, to align with the Bank's definition.

Return on equity

Return on equity is a profitability measure that presents the net income attributable to common shareholders as a percentage of average common shareholders' equity.

The Bank attributes capital to its business lines on a basis that approximates 10.5% of Basel III common equity capital requirements which includes credit, market and operational risks and leverage inherent within each business segment.

Return on equity for the business segments is calculated as a ratio of net income attributable to common shareholders of the business segment and the capital attributed.

Adjusted return on equity is a non-GAAP ratio which represents adjusted net income attributable to common shareholders as a percentage of adjusted average common shareholders' equity.

Return on equity by operating segment

T4 Return on equity by operating segment

For the year ended October 31, 2022 ($ millions)	Canadian Banking	International Banking	Global Wealth Management	Global Banking and Markets	Other	Total
Reported						
Net income (loss) attributable to common shareholders	**$ 4,757**	**$ 2,412**	**$ 1,553**	**$ 1,907**	**$ (973)**	**$ 9,656**
Total average common equity(1)	**18,105**	**18,739**	**9,576**	**13,328**	**5,442**	**65,190**
Return on equity	**26.3%**	**12.9%**	**16.2%**	**14.3%**	**nm(2)**	**14.8%**
Adjusted(3)						
Net income (loss) attributable to common shareholders	**4,773**	**2,440**	**1,580**	**1,907**	**(470)**	**10,230**
Total average common equity(1)	**18,105**	**18,739**	**9,576**	**13,328**	**5,619**	**65,367**
Return on equity	**26.4%**	**13.0%**	**16.5%**	**14.3%**	**nm(2)**	**15.6%**

(1) Average amounts calculated using methods intended to approximate the daily average balances for the period.
(2) Not meaningful.
(3) Refer to Tables on pages 18 and 19.

For the year ended October 31, 2021 ($ millions)	Canadian Banking	International Banking	Global Wealth Management	Global Banking and Markets	Other	Total
Reported						
Net income (loss) attributable to common shareholders	$ 4,135	$ 1,802	$ 1,554	$ 2,060	$ (160)	$ 9,391
Total average common equity(1)	16,388	17,377	9,301	12,450	8,311	63,827
Return on equity	25.2%	10.4%	16.7%	16.5%	nm(2)	14.7%
Adjusted(3)						
Net income (loss) attributable to common shareholders	4,151	1,834	1,581	2,060	(31)	9,595
Total average common equity(1)	16,388	17,377	9,301	12,450	8,385	63,901
Return on equity	25.3%	10.6%	17.0%	16.5%	nm(2)	15.0%

(1) Average amounts calculated using methods intended to approximate the daily average balances for the period.
(2) Not meaningful.
(3) Refer to Tables on pages 18 and 19.

Return on tangible common equity

Return on tangible common equity is a profitability measure that is calculated by dividing the net income attributable to common shareholders, adjusted for the amortization of intangibles (excluding software), by average tangible common equity. Tangible common equity is defined as common shareholders' equity adjusted for goodwill and intangible assets (excluding software), net of deferred taxes. This is a non-GAAP ratio.

Adjusted return on tangible common equity represents adjusted net income attributable to common shareholders as a percentage of adjusted average tangible common equity. This is a non-GAAP ratio.

T5 Return on tangible common equity

For the years ended October 31 ($ millions)	2022	2021
Reported		
Average common equity – Reported(1)	**$ 65,190**	$ 63,827
Average goodwill(1)(2)	**(9,197)**	(9,424)
Average acquisition-related intangibles (net of deferred tax)(1)	**(3,803)**	(3,895)
Average tangible common equity(1)	**$ 52,190**	$ 50,508
Net income attributable to common shareholders – Reported	**$ 9,656**	$ 9,391
Amortization of acquisition-related intangible assets (after tax)(3)	**71**	75
Net income attributable to common shareholders adjusted for amortization of acquisition-related intangible assets (after tax)	**$ 9,727**	$ 9,466
Return on tangible common equity(4)	**18.6%**	18.7%
Adjusted(3)		
Adjusted net income attributable to common shareholders	**$ 10,230**	$ 9,595
Average tangible common equity – adjusted(1)	**$ 52,367**	$ 50,582
Return on tangible common equity – adjusted(4)	**19.5%**	19.0%

(1) Average amounts calculated using methods intended to approximate the daily average balances for the period.
(2) Includes imputed goodwill from investments in associates.
(3) Refer to Tables on pages 18 and 19.
(4) Calculated on full dollar amounts.

Adjusted productivity ratio

Adjusted productivity ratio represents adjusted non-interest expenses as a percentage of adjusted total revenue.

Management uses the productivity ratio as a measure of the Bank's efficiency. A lower ratio indicates improved productivity.

Adjusted operating leverage

This financial metric measures the rate of growth in adjusted total revenue less the rate of growth in adjusted non-interest expenses.

Management uses operating leverage as a way to assess the degree to which the bank can increase operating income by increasing revenue.

Trading-related revenue (Taxable equivalent basis)

Trading-related revenue consists of net interest income and non-interest income. Included are unrealized gains and losses on security positions held, realized gains and losses from the purchase and sale of securities, fees and commissions from securities borrowing and lending activities, and gains and losses on trading derivatives. Underwriting and other advisory fees, which are shown separately in the Consolidated Statement of Income, are excluded. Trading related revenue includes certain net interest income and non-interest income items on a taxable equivalent basis (TEB). This methodology grosses up tax-exempt income earned on certain securities to an equivalent before tax basis.

Management believes that this basis for measurement of trading-related revenue 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.

Adjusted effective tax rate

The adjusted effective tax rate is calculated by dividing adjusted income tax expense by adjusted income before taxes.

T6 Financial highlights

As at and for the years ended October 31	2022	2021
Operating results ($ millions)		
Net interest income	**18,115**	16,961
Non-interest income	**13,301**	14,291
Total revenue	**31,416**	31,252
Provision for credit losses	**1,382**	1,808
Non-interest expenses	**17,102**	16,618
Income tax expense	**2,758**	2,871
Net income	**10,174**	9,955
Net income attributable to common shareholders	**9,656**	9,391
Operating performance		
Basic earnings per share ($)	**8.05**	7.74
Diluted earnings per share ($)	**8.02**	7.70
Return on equity (%) (1)	**14.8**	14.7
Return on tangible common equity (%) (2)	**18.6**	18.7
Productivity ratio (%)(1)	**54.4**	53.2
Operating leverage (%)(1)	**(2.4)**	1.1
Net interest margin (%)(2)	**2.20**	2.23
Financial position information ($ millions)		
Cash and deposits with financial institutions	**65,895**	86,323
Trading assets	**113,154**	146,312
Loans	**744,987**	636,986
Total assets	**1,349,418**	1,184,844
Deposits	**916,181**	797,259
Common equity	**65,150**	64,750
Preferred shares and other equity instruments	**8,075**	6,052
Assets under administration (1)	**641,636**	652,924
Assets under management(1)	**311,099**	345,762
Capital and liquidity measures		
Common Equity Tier 1 (CET1) capital ratio (%) (3)	**11.5**	12.3
Tier 1 capital ratio (%) (3)	**13.2**	13.9
Total capital ratio (%) (3)	**15.3**	15.9
Total loss absorbing capacity (TLAC) ratio (%) (4)	**27.4**	27.8
Leverage ratio (%)(5)	**4.2**	4.8
TLAC Leverage ratio (%)(4)	**8.8**	9.6
Risk-weighted assets ($ millions) (3)	**462,448**	416,105
Liquidity coverage ratio (LCR) (%) (6)	**119**	124
Net stable funding ratio (NSFR) (%) (7)	**111**	110
Credit quality		
Net impaired loans ($ millions)	**3,151**	2,801
Allowance for credit losses ($ millions) (8)	**5,499**	5,731
Gross impaired loans as a % of loans and acceptances (1)	**0.62**	0.67
Net impaired loans as a % of loans and acceptances (1)	**0.41**	0.42
Provision for credit losses as a % of average net loans and acceptances (1)(9)	**0.19**	0.29
Provision for credit losses on impaired loans as a % of average net loans and acceptances (1)(9)	**0.24**	0.53
Net write-offs as a % of average net loans and acceptances (1)	**0.24**	0.54
Adjusted results(2)		
Adjusted net income ($ millions)	**10,749**	10,169
Adjusted diluted earnings per share ($)	**8.50**	7.87
Adjusted return on equity (%)	**15.6**	15.0
Adjusted return on tangible common equity (%)	**19.5**	19.0
Adjusted productivity ratio (%)	**52.8**	52.2
Adjusted operating leverage (%)	**(1.1)**	1.5
Common share information		
Closing share price ($) (TSX)	**65.85**	81.14
Shares outstanding (millions)		
Average – Basic	**1,199**	1,214
Average – Diluted	**1,208**	1,225
End of period	**1,191**	1,215
Dividends paid per share ($)	**4.06**	3.60
Dividend yield (%) (1)	**5.1**	5.2
Market capitalization ($ millions) (TSX)	**78,452**	98,612
Book value per common share ($) (1)	**54.68**	53.28
Market value to book value multiple (1)	**1.2**	1.5
Price to earnings multiple (trailing 4 quarters) (1)	**8.2**	10.5
Other information		
Employees (full-time equivalent)	**90,979**	89,488
Branches and offices	**2,384**	2,518

(1) Refer to Glossary on page 133 for the description of the measure.
(2) Refer to page 17 for a discussion of Non-GAAP measures.
(3) This measure has been disclosed in this document in accordance with OSFI Guideline – Capital Adequacy Requirements (November 2018).
(4) This measure has been disclosed in this document in accordance with OSFI Guideline – Total Loss Absorbing Capacity (September 2018).
(5) This measure has been disclosed in this document in accordance with OSFI Guideline – Leverage Requirements (November 2018).
(6) This measure has been disclosed in this document in accordance with OSFI Guideline – Public Disclosure Requirements for Domestic Systemically Important Banks on Liquidity Coverage Ratio (April 2015).
(7) This measure has been disclosed in this document in accordance with OSFI Guideline – Net Stable Funding Ratio Disclosure Requirements (January 2021).
(8) Includes allowance for credit losses on all financial assets – loans, acceptances,off-balance sheet exposures, debt securities, and deposits with financial institutions.
(9) Includes provision for credit losses on certain financial assets – loans, acceptances, andoff-balance sheet exposures.

OVERVIEW OF PERFORMANCE

Financial Results: 2022 vs 2021

Net income was $10,174 million in 2022, up 2% from $9,955 million in 2021, due primarily to higher net interest income and lower provision for credit losses and lower provision for income taxes, partly offset by higher non-interest expenses. Diluted earnings per share (EPS) were $8.02 compared to $7.70. Return on equity was 14.8% compared to 14.7%.

Adjusting items impacting net income in the current year were $575 million after-tax ($676 million pre-tax) [refer to Non-GAAP Measures starting on page 17]. The Bank recorded a net loss of $340 million ($361 million pre-tax) in relation to the divesture of investments in associates in Venezuela and Thailand, and the wind-down of operations in India and Malaysia, mostly relating to the reclassification of cumulative foreign currency translation losses net of hedges, from accumulated other comprehensive income to non-interest income in the Consolidated Statement of Income. The Bank recognized costs of $98 million ($133 million pre-tax) to support the expansion of the Scene+ loyalty program to include Empire Company Limited as a partner. The Bank recorded a restructuring charge of $66 million ($85 million pre-tax) primarily related to the strategic decision to realign the Global Banking and Markets business in Asia Pacific to focus on select banking and capital markets activities in the region. The charge also included reductions in Canadian and international technology employees, driven by ongoing technology modernization and digital transformation. Other adjusting items in the current year included amortization of acquisition-related intangible assets of $71 million ($97 million pre-tax). Net impact of the adjustments on diluted earnings per share was $0.48 and on Basel III Common Equity Tier 1 (CET1) ratio was two basis points.

The adjustments in the prior year were $214 million after-tax ($291 million pre-tax) which included restructuring and other provisions of $139 million after-tax ($188 million pre-tax), and amortization of acquisition-related intangible assets of $75 million ($103 million pre-tax).

Adjusted net income was $10,749 million, up 6% from $10,169 million. The increase in adjusted net income was due primarily to higher net interest income, lower provision for credit losses and lower income taxes, partly offset by higher non-interest expenses. Adjusted diluted EPS were $8.50 compared to $7.87 and adjusted return on equity was 15.6% compared to 15.0%.

Net interest income was $18,115 million, an increase of $1,154 million or 7%. The increase was driven by strong loan growth and higher margins across all business lines, partly offset by a lower contribution from asset/liability management activities related to higher funding costs and the negative impact of foreign currency translation. Net interest margin was down three basis points to 2.20%, driven primarily by a lower contribution from asset/liability management activities related to higher funding costs.

Non-interest income of $13,301 million was down $990 million or 7%, including adjusting items of $361 million [refer to Non-GAAP Measures starting on page 17]. Adjusted non-interest income decreased $629 million or 4%, due primarily to lower trading revenues, investment gains, underwriting and advisory fees, income from associated corporations, unrealized losses on non-trading derivatives, mutual fund fees and the negative impact of foreign currency translation. These were partly offset by higher banking revenues, brokerage fees and non-trading foreign exchange fees.

The provision for credit losses was $1,382 million compared to $1,808 million last year, a decrease of $426 million or 24% due mainly to lower provision for credit losses on impaired loans, partly offset by higher provision for credit losses on performing loans, across all business lines. The provision for credit losses ratio decreased 10 basis points to 19 basis points.

Non-interest expenses were $17,102 million, an increase of $484 million or 3%, including adjusting items of $315 million this year compared to $291 million last year [refer to Non-GAAP Measures starting on page 17]. Adjusted non-interest expenses also increased 3%. Higher personnel costs, share-based payments, professional fees, advertising, technology-related costs, and business and capital taxes were partly offset by the positive impact of foreign currency translation. The prior year's expenses were impacted by higher performance-based compensation and the increased investment in the SCENE loyalty program. The productivity ratio was 54.4% compared to 53.2%. On an adjusted basis, the productivity ratio was 52.8% compared to 52.2%. Operating leverage was negative 2.4%. On an adjusted basis, operating leverage was negative 1.1%.

The provision for income taxes was $2,758 million compared to $2,871 million last year. The effective tax rate was 21.3% compared to 22.4% in the prior year. The adjusted effective tax rate was 21.0% compared to 22.5% due primarily to higher inflation-related benefits in Chile and Mexico and higher tax-exempt income during the year.

The Basel III Common Equity Tier 1 (CET1) ratio was 11.5% as at October 31, 2022, compared to 12.3% last year.

Medium-term financial objectives

The following table provides a summary of our 2022 performance against our medium-term financial performance objectives:

	2022 Results	
	Reported	Adjusted(1)
Diluted earnings per share growth of 7%+	4.2%	8.0%
Return on equity of 14%+	14.8%	15.6%
Achieve positive operating leverage	Negative 2.4%	Negative 1.1%
Maintain strong capital ratios	CET1 capital ratio of 11.5%	N/A

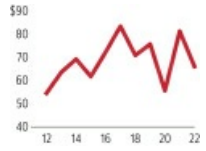
(1) Refer to Non-GAAP Measures on page 17.

Shareholder Returns

In fiscal 2022, the total shareholder return on the Bank's shares was negative 14.5%, compared to the total return of the S&P/TSX Composite Index of negative 4.8%. The total compound annual shareholder return on the Bank's shares over the past five years was 0.3%, and 6.7% over the past 10 years. This is below the total annual return of the S&P/TSX Composite Index over the past five years and ten years of 7.2% and 7.8%, respectively.

Dividends per share totaled $4.06 for the year, up 13% from 2021. The Bank's target payout range is 40-50%. The dividend payout ratio for the year was 50.3%. The Board of Directors approved a quarterly dividend of $1.03 per common share, at its meeting on November 28, 2022. This quarterly dividend applies to shareholders of record at the close of business on January 4, 2023, and is payable January 27, 2023.

C1 Closing common share price as at October 31



T7 Shareholder returns

For the years ended October 31	2022	2021
Closing market price per common share ($)	**65.85**	81.14
Dividends paid ($ per share)	**4.06**	3.60
Dividend yield (%)(1)	**5.1**	5.2
Increase (decrease) in share price (%)	**(18.8)**	46.6
Total annual shareholder return (%)(1)	**(14.5)**	53.7

(1) Refer to Glossary on page 133 for the description of the measure.

C2 Return to common shareholders
Share price appreciation plus dividends reinvested, 2012=100



Economic Summary and Outlook

The global economic outlook has deteriorated over the last year owing to the combined impacts of central bank efforts to tame inflation, the consequences of Russia's war on Ukraine, pandemic management in China and the impact of higher energy prices. Concerns about potential slowdown and high inflation have led to very volatile financial markets, which have clouded the outlook further.

In Canada, as in the United States, economic fundamentals suggest the reduction in economic activity will be minor and more like a stall in growth. Firm and household balance sheets remain in solid shape despite the rise in interest rates and fall in asset values. Labour markets in both countries continue to show historic strength suggesting that firms are unlikely to resort to dramatic cuts in their workforce as growth slows. In Canada, still relatively high commodity prices continue to provide a boost to economic activity, in contrast to the effect seen in commodity importing countries. Inflation is expected to decline gradually over coming quarters as the impact of higher interest rates is felt through economies. A broad number of upstream indicators of inflation suggest that the factors that have boosted inflation will soon have the opposite impact on inflation. The speed at which inflation will decline owing to these factors will be mitigated by the impact of rising wages and their impact on service sector prices. Despite this assessment, the inflation outlook remains clouded. Inflation has defied expectations for most of the last 2 years and we have yet to observe tangible impacts of the observed decline in the factors underlying the rise in prices seen during that time.

The Bank of Canada and Federal Reserve are nearing the end of their monetary policy tightening cycles. We expect that the Bank of Canada's policy rate peaks at 4.25% by the end of the year and that the Federal Reserve stops raising its target rate when it reaches 5% early next year.

Central banks in the Pacific Alliance Countries have also been raising policy rates aggressively to counter inflationary pressures. This process is also nearing its end as the pace of economic expansion moderates. Political uncertainty, along with extreme volatility in international capital markets have been headwinds to the region over the last year, but economies and capital flows have been remarkably resilient considering these challenges. Growth will decelerate further given the rising in funding costs, the decline in commodity prices associated with global economic weakness, and the reduction in demand emanating from the drop in European and Chinese economic activity. Despite these developments, growth in the Pacific Alliance Countries is likely to outstrip that in most advanced nations through 2023.

Outlook

After a period of sustained economic growth driven in part by fiscal and monetary stimulus and the impact of higher commodity prices, the Bank expects economic growth to moderate in its major markets through much of 2023. The Bank's earnings in 2023 are expected to benefit from higher interest income and non-interest revenue but be negatively impacted by higher funding costs, higher expenses that are expected to grow inline with inflation, normalizing provision for credit losses related to the end of performing allowance releases, and a higher tax rate in Canada and certain international countries. Once rates stabilize, the Bank is expected to benefit from asset repricing, resulting in net interest margin expansion. The Bank's capital and liquidity position is expected to remain strong in 2023.

Impact of Foreign Currency Translation

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

T8 Impact of foreign currency translation

	2022		2021	
For the fiscal years	**Average exchange rate**	**% Change**	Average exchange rate	% Change
U.S. Dollar/Canadian Dollar	**0.777**	**(2.3)%**	0.795	6.9%
Mexican Peso/Canadian Dollar	**15.799**	**(1.5)%**	16.035	1.3%
Peruvian Sol/Canadian Dollar	**3.002**	**(1.0)%**	3.032	18.0%
Colombian Peso/Canadian Dollar	**3,187**	**8.8%**	2,929	7.6%
Chilean Peso/Canadian Dollar	**669.905**	**12.9%**	593.123	0.2%

T8 Impact of foreign currency translation (Cont'd)

Impact on net income (1) ($ millions except EPS)	2022 vs. 2021	2021 vs. 2020
Net interest income	**$ (158)**	$ (512)
Non-interest income(2)	**(109)**	(276)
Non-interest expenses	**92**	408
Other items (net of tax)	**72**	203
Net income	**$ (103)**	$ (177)
Earnings per share (diluted)	**$ (0.09)**	$ (0.14)
Impact by business line ($ millions)		
Canadian Banking	**$ 3**	$ (6)
International Banking(2)	**(97)**	(130)
Global Wealth Management	**–**	(15)
Global Banking and Markets	**27**	(79)
Other(2)	**(36)**	53
	$ (103)	$ (177)

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

GROUP FINANCIAL PERFORMANCE

Net Income

Net income was $10,174 million in 2022, up 2% from $9,955 million in 2021, due primarily to higher net interest income, lower provision for credit losses and lower provision for income taxes, partly offset by higher non-interest expenses.

Adjusting items during the current year were $575 million (refer to Table T1). These included a net loss on divestitures and wind-down of operations of $340 million, support costs related to the Scene+ loyalty program of $98 million, and restructuring and other provisions of $66 million (October 31, 2021 – $139 million). Adjusting items during the current year also included amortization of acquisition-related intangible assets of $71 million (October 31, 2021 – $75 million).

Adjusted net income was $10,749 million, up 6% from $10,169 million. The increase in adjusted net income was due primarily to higher net interest income, lower provision for credit losses and lower provision for income taxes, partly offset by higher non-interest expenses.

Net Interest Income

Net interest income was $18,115 million, an increase of $1,154 million or 7%. The increase was driven by strong loan growth and higher margins across all business lines, partly offset by a lower contribution from asset/liability management activities related to higher funding costs and the negative impact of foreign currency translation.

In Canadian Banking, net interest income increased $971 million or 12% due to strong loan and deposit growth, as well as a higher net interest margin from the impact of Bank of Canada rate increases. International Banking net interest income increased $275 million or 4%, driven primarily by higher commercial loans and residential mortgages. Net interest income increased $136 million or 22% in Global Wealth Management driven by higher deposit margins and strong loan growth. Global Banking and Markets net interest income increased $194 million or 14%, due mainly to higher deposit margins and loan growth. In the Other segment net interest income decreased $422 million due mainly to higher funding costs resulting from higher interest rates and asset/liability management activities.

Core earning assets (refer to Non-GAAP Measures on page 17) increased $81 billion or 11% to $833 billion driven by strong growth in residential mortgages, commercial and corporate loans, as well as higher treasury assets.

Net interest margin was down three basis points to 2.20%, driven primarily by a lower contribution from asset/liability management activities related to higher funding costs.

T9 Average balance sheet[1] and net interest income

For the fiscal years ($ billions)	2022 Average balance	2022 Interest	2022 Average rate	2021 Average balance	2021 Interest	2021 Average rate
Assets						
Deposits with financial institutions	**$ 81.9**	**$ 0.8**	**1.02%**	$ 75.6	$ 0.2	0.24%
Trading assets	**138.6**	**0.8**	**0.57%**	142.9	0.3	0.22%
Securities purchased under resale agreements and securities borrowed	**141.7**	**0.5**	**0.32%**	119.8	0.2	0.15%
Investment securities	**97.3**	**2.1**	**2.14%**	92.2	1.1	1.25%
Loans:						
Residential mortgages	**337.7**	**11.1**	**3.29%**	299.7	9.3	3.09%
Personal loans	**95.5**	**5.8**	**6.07%**	92.0	5.1	5.56%
Credit cards	**13.6**	**2.3**	**16.74%**	13.3	2.3	17.11%
Business and government	**253.3**	**10.2**	**4.03%**	217.2	6.5	3.00%
Allowance for credit losses	**(5.4)**			(6.8)		
Total loans	**$ 694.7**	**$ 29.4**	**4.23%**	$ 615.4	$ 23.2	3.76%
Customers' liability under acceptances	**20.0**			16.4		
Total average earning assets	**$1,174.2**	**$ 33.6**	**2.86%**	$1,062.3	$ 25.0	2.35%
Other assets	**107.5**			94.9		
Total average assets	**$1,281.7**	**$ 33.6**	**2.62%**	$1,157.2	$ 25.0	2.16%
Liabilities and equity						
Deposits:						
Personal	**$ 252.9**	**$ 3.0**	**1.19%**	$ 245.4	$ 2.0	0.81%
Business and government	**572.6**	**9.3**	**1.63%**	489.7	4.2	0.85%
Financial institutions	**51.8**	**0.5**	**0.88%**	44.4	0.3	0.72%
Total deposits	**$ 877.3**	**$ 12.8**	**1.46%**	$ 779.5	$ 6.5	0.83%
Obligations related to securities sold under repurchase agreements and securities lent	**117.6**	**0.3**	**0.26%**	116.5	0.1	0.12%
Subordinated debentures	**7.8**	**0.3**	**3.47%**	6.6	0.2	2.74%
Other interest-bearing liabilities	**81.5**	**2.1**	**2.55%**	78.3	1.2	1.58%
Total interest-bearing liabilities	**$1,084.2**	**$ 15.5**	**1.42%**	$ 980.9	$ 8.0	0.82%
Financial instruments designated at fair value through profit or loss	**22.8**			21.1		
Other liabilities including acceptances	**101.3**			83.3		
Equity[2]	**73.4**			71.9		
Total liabilities and equity	**$1,281.7**	**$ 15.5**	**1.20%**	$1,157.2	$ 8.0	0.69%
Net interest income		**$ 18.1**			$ 17.0	

(1) Average of daily balances.
(2) Includes non-controlling interest of $1.7 (2021 – $2.3).

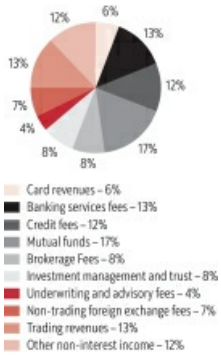
Non-Interest Income

T10 Non-interest income

For the fiscal years ($ millions)	2022	2021	2022 versus 2021
Banking			
Card revenues	$ 779	$ 749	4%
Banking services fees	1,770	1,598	11
Credit fees	1,647	1,485	11
Total banking revenues	$ 4,196	$ 3,832	9%
Wealth management			
Mutual funds	$ 2,269	$ 2,394	(5)%
Brokerage fees	1,125	1,039	8
Investment management and trust			
Investment management and custody	795	792	–
Personal and corporate trust	204	202	1
	999	994	1
Total wealth management revenues	$ 4,393	$ 4,427	(1)%
Underwriting and advisory fees	543	724	(25)
Non-trading foreign exchange fees	878	787	12
Trading revenues	1,791	2,033	(12)
Net gain on sale of investment securities	74	419	(82)
Net income from investments in associated corporations	268	339	(21)
Insurance underwriting income, net of claims	433	398	9
Other fees and commissions	650	677	(4)
Other	75	655	(89)
Total non-interest income	$ 13,301	$ 14,291	(7)%
Non-GAAP Adjusting items(1)			
Net loss on divestitures and wind-down of operations (2)	361	–	
Adjusted non-interest income	$ 13,662	$ 14,291	(4)%

(1) Refer to Non-GAAP Measures on page 17.
(2) Recorded in Other Non-Interest Income.

C3 Sources of non-interest income



Non-interest income was down $990 million or 7% to $13,301 million, including adjusting items of $361 million (refer to Non-GAAP Measures starting on page 17). Adjusted non-interest income decreased $629 million or 4%. The negative impact of foreign currency translation was 2%. The remaining decrease was due primarily to lower trading revenues, investment gains, underwriting and advisory fees, income from associated corporations, and unrealized losses on non-trading derivatives. These were partly offset by higher banking revenues, and non-trading foreign exchange fees.

Banking revenues were up $364 million or 9% to $4,196 million. The increase was due to higher credit fees, deposit and payment services fees, card revenues, and other fee and commission revenues.

Wealth management revenues decreased $34 million or 1% due to lower mutual fund revenues from elevated annual performance fees in the prior year, partly offset by higher brokerage fees.

Underwriting and advisory fees were down by $181 million or 25%, due mainly to lower new issue capital markets activities.

Trading revenues were down $242 million or 12%. The decline was mainly from lower fixed income and foreign exchange, partly offset by higher global equities.

Net gain on sale of investment securities was down $345 million or 82%, due to elevated gains on bond securities sales in the prior year which benefited from the low interest rate environment.

Net income from investments in associated corporations was down $71 million or 21%, due to lower investment gains in the underlying businesses.

Insurance underwriting income increased $35 million or 9%. Claims expenses were lower than the prior year, as 2021 reflected higher COVID-19 related claims. This was partly offset by lower premiums in the current year.

Other income declined by $580 million, including adjusting items of $361 million related to the net loss on divestitures and wind-down of operations. On an adjusted basis, other income decreased by $219 million due primarily to unrealized losses on non-trading derivatives.

T11 Trading-related revenues (1)

For the fiscal years ($ millions)	2022	2021
Trading-related revenue (TEB)(2)		
Net interest income	**$ (112)**	$ 136
Non-interest income		
Trading revenues	**2,124**	2,321
Other fees and commissions	**158**	185
Total trading-related revenue (TEB)	**$ 2,170**	$ 2,642
Trading-related revenue (TEB)		
Interest rate and credit	**$ 606**	$ 941
Equities	**829**	932
Foreign exchange and Other(3)	**735**	769
Total trading-related revenue (TEB)	**$ 2,170**	$ 2,642
Taxable equivalent adjustment	**(333)**	(288)
Trading-related revenue (Non-TEB)	**$ 1,837**	$ 2,354

(1) Refer to Non-GAAP Measures on page 17.
(2) Trading-related revenue consists of net interest income and non-interest income. Included are unrealized gains and losses on security positions held, realized gains and losses from the purchase and sale of securities, fees and commissions from securities borrowing and lending activities, and gains and losses on trading derivatives. Underwriting and other advisory fees, which are shown separately in the consolidated statement of income, are excluded.
(3) Foreign exchange and Other includes trading-related revenues from foreign exchange, commodities and other trading activities of the Bank.

Provision for Credit Losses

The provision for credit losses was $1,382 million compared to $1,808 million, a decrease of $426 million or 24% from last year due primarily to lower provision for credit losses on impaired loans across all business lines, partly offset by a lower reversal of provision for credit losses on performing loans.

Provision for credit losses on performing loans was a net reversal of $312 million, compared to a net reversal of $1,498 million. The provision reversals for the period were primarily in retail driven by improved portfolio credit quality expectations and in the energy portfolio due to increased commodity prices. This was partly offset by the less favorable macroeconomic forecast and portfolio growth. The provision reversals included approximately $515 million (October 31, 2021 – $700 million) of allowance releases from those built up in fiscal year 2020 which are no longer required.

The provision for credit losses on impaired loans was $1,694 million, a decrease of $1,612 million or 49% from last year, driven primarily by lower formations in the International Banking retail portfolio. The provision for credit losses ratio on impaired loans decreased 29 basis points to 24 basis points.

The provision for credit losses ratio decreased 10 basis points to 19 basis points.

T12 Provision for credit losses by business line

	2022			2021		
For the fiscal years ($ millions)	Performing (Stage 1 and 2)	Impaired (Stage 3)	Total	Performing (Stage 1 and 2)	Impaired (Stage 3)	Total
Canadian Banking						
Retail	**$ (297)**	**$ 504**	**$ 207**	$ (166)	$ 578	$ 412
Commercial	**(46)**	**48**	**2**	(191)	112	(79)
Total	**(343)**	**552**	**209**	(357)	690	333
International Banking						
Retail	**51**	**910**	**961**	(952)	2,329	1,377
Commercial	**29**	**236**	**265**	(54)	250	196
Total	**80**	**1,146**	**1,226**	(1,006)	2,579	1,573
Global Wealth Management	**2**	**4**	**6**	–	2	2
Global Banking and Markets	**(59)**	**(8)**	**(67)**	(135)	35	(100)
Other	**(1)**	**–**	**(1)**	1	–	1
Provision for credit losses on loans, acceptances and off-balance sheet exposures	**$ (321)**	**$ 1,694**	**$ 1,373**	$ (1,497)	$ 3,306	$ 1,809
International Banking	**$ 4**	**$ –**	**$ 4**	$ 1	$ –	$ 1
Global Wealth Management	**–**	**–**	**–**	–	–	–
Global Banking and Markets	**1**	**–**	**1**	–	–	–
Other	**4**	**–**	**4**	(2)	–	(2)
Provision for credit losses on debt securities and deposits with banks	**$ 9**	**$ –**	**$ 9**	$ (1)	$ –	$ (1)
Total provision for credit losses	**$ (312)**	**$ 1,694**	**$ 1,382**	$ (1,498)	$ 3,306	$ 1,808

T12A Provision for credit losses against impaired financial instruments by business line

For the fiscal years ($ millions)	2022	2021
Canadian Banking		
Retail	$ 504	$ 578
Commercial	48	112
	$ 552	$ 690
International Banking		
Caribbean and Central America	$ 170	$ 324
Latin America		
Mexico	205	449
Peru	255	1,059
Chile	238	181
Colombia	226	522
Other Latin America	52	44
Total Latin America	976	2,255
	$ 1,146	$ 2,579
Global Wealth Management	$ 4	$ 2
Global Banking and Markets		
Canada	$ (6)	$ 16
U.S.	12	2
Asia and Europe	(14)	17
	$ (8)	$ 35
Total	$ 1,694	$ 3,306

T13 Provision for credit losses as a percentage of average net loans and acceptances (1)(2)

For the fiscal years (%)	2022	2021
Canadian Banking		
Retail	0.06%	0.13%
Commercial	–	(0.13)
	0.05	0.09
International Banking		
Retail	1.48	2.25
Commercial	0.31	0.26
	0.82	1.15
Global Wealth Management	0.03	0.01
Global Banking and Markets	(0.06)	(0.10)
Provisions against impaired loans	0.24	0.53
Provisions against performing loans	(0.05)	(0.24)
Provision for credit losses as a percentage of average net loans and acceptances	0.19%	0.29%

(1) Includes provision for credit losses on certain financial assets - loans, acceptances, andoff-balance sheet exposures.
(2) Refer to Glossary on page 133 for the description of the measure.

T14 Net write-offs(1) as a percentage of average loans and acceptances (2)

For the fiscal years (%)	2022	2021
Canadian Banking		
Retail	0.16%	0.19%
Commercial	0.04	0.19
	0.13	0.19
International Banking		
Retail	1.50	3.89
Commercial	0.23	0.28
	0.79	1.89
Global Wealth Management	0.03	0.01
Global Banking and Markets	(0.02)	0.05
Total	0.24%	0.54%

(1) Write-offs net of recoveries.
(2) Refer to Glossary on page 133 for the description of the measure.

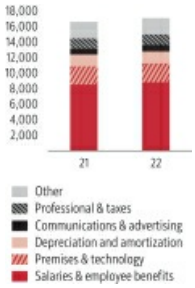
Non-Interest Expenses

T15 Non-interest expenses and productivity

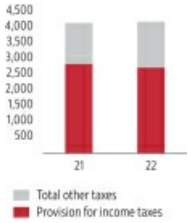
For the fiscal years ($ millions)	2022	2021	2022 versus 2021
Salaries and employee benefits			
Salaries	$ 4,989	$ 4,694	6%
Performance-based compensation	2,004	2,086	(4)
Share-based payments	335	223	50
Other employee benefits	1,508	1,538	(2)
	$ 8,836	$ 8,541	3%
Premises and technology			
Premises	516	513	1
Technology	1,908	1,838	4
	$ 2,424	$ 2,351	3%
Depreciation and amortization			
Depreciation	749	769	(3)
Amortization of intangible assets	782	742	5
	$ 1,531	$ 1,511	1%
Communications	$ 361	$ 369	(2)%
Advertising and business development	$ 480	$ 404	19%
Professional	$ 826	$ 789	5%
Business and capital taxes			
Business taxes	483	461	5
Capital taxes	58	50	16
	$ 541	$ 511	6%
Other	$ 2,103	$ 2,142	(2)%
Total non-interest expenses	$ 17,102	$ 16,618	3%
Non-GAAP adjusting items(1)			
Amortization of acquisition-related intangible assets(2)	(97)	(103)	
Restructuring and other provisions(3)	(85)	(188)	
Support costs for the Scene+ Loyalty Program (3)	(133)	–	
Adjusted non-interest expenses	$ 16,787	$ 16,327	3%
Productivity ratio(4)	54.4%	53.2%	
Adjusted productivity ratio(1)	52.8%	52.2%	

(1) Refer to Non-GAAP Measures starting on page 17.
(2) Recorded in Depreciation and Amortization.
(3) Recorded in Other Operating Expenses.
(4) Refer to Glossary on page 133 for the description of the measure.

C4 Non-interest expenses $ millions



C5 Direct and indirect taxes $ millions



Non-interest expenses were $17,102 million, an increase of $484 million or 3%, including adjusting items of $315 million this year compared to $291 million last year [refer to Non-GAAP Measures starting on page 17]. Adjusted non-interest expenses also increased 3%. This increase was due to higher personnel costs, share-based payments, professional fees, advertising, technology-related costs, and business and capital taxes. This was partly offset by the positive impact of foreign currency translation. The prior year's adjusted expenses were impacted by higher performance-based compensation related to elevated wealth management performance fees and the increased investment in the SCENE loyalty program.

The Bank's total technology cost, consisting of Technology expenses in Table T15 as well as those included within salaries, professional, and amortization of intangible assets and depreciation, was approximately $4.1 billion, an increase of 8% compared to 2021 and represented 13% of revenues, compared to 12% in 2021. This reflects the Bank's continued investment in modernization, growth and technology initiatives, and cybersecurity, to accelerate digitization and develop new ways to reach customers.

The productivity ratio was 54.4% compared to 53.2%. On an adjusted basis, the productivity ratio was 52.8% compared to 52.2%. Operating leverage was negative 2.4%. On an adjusted basis, operating leverage was negative 1.1%.

Provision for Income Taxes

The provision for income taxes was $2,758 million compared to $2,871 million last year. The effective tax rate was 21.3% compared to 22.4%. The adjusted effective tax rate was 21.0% compared to 22.5% due primarily to higher inflation-related benefits in Chile and Mexico, as well as higher tax-exempt income during the year.

Fourth Quarter Review

T16 Fourth quarter financial results

($ millions)	For the three months ended October 31 2022	July 31 2022	October 31 2021
Reported Results			
Net interest income	**$ 4,622**	$ 4,676	$ 4,217
Non-interest income	**3,004**	3,123	3,470
Total revenue	**7,626**	7,799	7,687
Provision for credit losses	**529**	412	168
Non-interest expenses	**4,529**	4,191	4,271
Income tax expense	**475**	602	689
Net income	**$ 2,093**	$ 2,594	$ 2,559
Net income attributable to non-controlling interests in subsidiaries (NCI)	**38**	54	70
Net income attributable to equity holders of the Bank	**$ 2,055**	$ 2,540	$ 2,489
Preferred shareholders and other equity instrument holders	**106**	36	78
Common shareholders	**1,949**	2,504	2,411
Adjustments(1)			
Adjusting items impacting non-interest income and total revenue (Pre-tax)			
Net loss on divestitures and wind-down of operations	**$ 361**	$ –	$ –
Adjusting items impacting non-interest expenses (Pre-tax)			
Amortization of acquisition-related intangible assets	**24**	24	25
Restructuring and other provisions	**85**	–	188
Support costs for the Scene+ loyalty program	**133**	–	–
Total non-interest expense adjusting items (Pre-tax)	**242**	24	213
Total impact of adjusting items on net income before taxes	**603**	24	213
Impact of adjusting items on income tax expense			
Net loss on divestitures and wind-down of operations	**(21)**	–	–
Amortization of acquisition-related intangible assets	**(6)**	(7)	(7)
Restructuring and other provisions	**(19)**	–	(49)
Support costs for the Scene+ loyalty program	**(35)**	–	–
Total impact of adjusting items on income tax expense	**(81)**	(7)	(56)
Total impact of adjusting items on net income	**522**	17	157
Impact of adjusting items on NCI related to restructuring and other provisions	**(1)**	–	(10)
Total impact of adjusting items on net income attributable to equity holders and common shareholders	**$ 521**	$ 17	$ 147
Adjusted Results			
Net interest income	**$ 4,622**	$ 4,676	$ 4,217
Non-interest income	**3,365**	3,123	3,470
Total revenue	**7,987**	7,799	7,687
Provision for credit losses	**529**	412	168
Non-interest expenses	**4,287**	4,167	4,058
Income tax expense	**556**	609	745
Net income	**$ 2,615**	$ 2,611	$ 2,716
Net income attributable to non-controlling interests in subsidiaries (NCI)	**39**	54	80
Net income attributable to equity holders of the Bank	**$ 2,576**	$ 2,557	$ 2,636
Preferred shareholders and other equity instrument holders	**106**	36	78
Common shareholders	**$ 2,470**	$ 2,521	$ 2,558

(1) Refer to Non-GAAP Measures starting on page 17.

Net income

Q4 2022 vs Q4 2021

Net income was $2,093 million compared to $2,559 million, a decrease of 18%. This quarter included adjusting items of $522 million compared to $157 million in the prior year [refer to the Non-GAAP measures section on page 17]. Adjusted net income was $2,615 million compared to $2,716 million, a decrease of 4%, due mainly to lower non-interest income, higher non-interest expenses and higher provision for credit losses, partly offset by higher net interest income and lower provision for income taxes.

Q4 2022 vs Q3 2022

Net income was $2,093 million compared to $2,594 million, a decrease of 19%. This quarter included adjusting items of $522 million compared to $17 million in the prior quarter [refer to the Non-GAAP measures section on page 17]. Adjusted net income was $2,615 million compared to $2,611 million, an increase of $4 million. The increase was due mainly to higher non-interest income and lower provision for income taxes, partly offset by higher provision for credit losses and non-interest expenses.

Total revenue

Q4 2022 vs Q4 2021

Revenues were $7,626 million compared to $7,687 million, a decrease of 1%, including adjusting items of $361 million this quarter. Adjusted revenues were $7,987 million compared to $7,687 million, an increase of 4%, due mainly to higher net interest income, partly offset by lower non-interest income.

Q4 2022 vs Q3 2022

Revenues were $7,626 million compared to $7,799 million, a decrease of 2%, including adjusting items of $361 million this quarter. Adjusted revenues were $7,987 million compared to $7,799 million, an increase of 2%, due mainly to higher non-interest income, partly offset by lower net interest income.

Net interest income

Q4 2022 vs Q4 2021

Net interest income was $4,622 million, an increase of $405 million or 10%, due primarily to strong asset growth across all business lines.

Net interest margin was up one basis point to 2.18%, driven primarily by higher margins across all business lines, which benefited from central bank rate increases, partly offset by a lower contribution from asset/liability management activities related to higher funding costs, and increased levels of high quality, lower-margin liquid assets.

Q4 2022 vs Q3 2022

Net interest income decreased $54 million or 1%. Loan growth across all business lines was more than offset by lower net interest margins.

Net interest margin of 2.18% was down four basis points driven by a lower contribution from asset/liability management activities related to higher funding costs, as well as a lower Canadian Banking margin, partly offset by a higher International Banking margin, as well as decreased levels of high quality, lower-margin liquid assets

Non-interest income

Q4 2022 vs Q4 2021

Non-interest income was $3,004 million, down $466 million or 13% including adjusting items of $361 million this quarter (refer to Non-GAAP Measures starting on page 17). Adjusted non-interest income was down $105 million or 3%. The decrease was due mainly to lower wealth management revenues, unrealized losses on non-trading derivatives, and lower income from associated corporations. These were partly offset by higher banking revenues, other fees and commission revenues, and non-trading foreign exchange fees.

Q4 2022 vs Q3 2022

Non-interest income was down $119 million or 4% including adjusting items of $361 million this quarter (refer to Non-GAAP Measures starting on page 17). Adjusted non-interest income was up $242 million or 8%, due primarily to higher trading revenues, banking revenues, other fees and commission revenues, as well as underwriting and advisory fees, partly offset by lower wealth management revenues.

Provision for credit losses

Q4 2022 vs Q4 2021

The provision for credit losses was $529 million compared to $168 million, an increase of $361 million. The provision for credit losses ratio increased 18 basis points to 28 basis points.

The provision for credit losses on performing loans was $35 million, compared to a net reversal of $343 million. The provision this period was driven by portfolio growth and the less favourable macroeconomic forecast, partly offset by improved credit quality expectations mainly in Canadian retail and improved credit quality in Global Banking and Markets. Higher provision reversals last year were due mainly to the more favourable credit and macroeconomic outlook as well as credit migration to impaired loans across most markets.

The provision for credit losses on impaired loans was $494 million compared to $511 million, a decrease of $17 million or 3% due primarily to lower provisions in the International retail portfolio driven by lower formations, partly offset by higher formations in the Canadian retail portfolio. The provision for credit losses ratio on impaired loans was 26 basis points, a decrease of five basis points.

Q4 2022 vs Q3 2022

The provision for credit losses was $529 million compared to $412 million, an increase of $117 million or 28%. The provision for credit losses ratio increased six basis points to 28 basis points.

The provision for credit losses on performing loans was $35 million, compared to $23 million last quarter, driven by the less favourable macroeconomic forecast and portfolio growth, partly offset by improved credit quality expectations mainly in Canadian retail.

The provision for credit losses on impaired loans was $494 million compared to $389 million, an increase of $105 million or 27%, due to higher corporate and commercial provisions and retail formations across markets.

The provision for credit losses ratio on impaired loans was 26 basis points, an increase of five basis points.

Non-interest expenses

Q4 2022 vs Q4 2021

Non-interest expenses were $4,529 million, up $258 million or 6% including adjusting items of $242 million versus $213 million in the prior year (refer to Non-GAAP Measures starting on page 17). Adjusted non-interest expenses were $4,287 million, up $229 million or 6%, driven by higher personnel costs, performance-based compensation, advertising and technology-related costs, business and capital taxes and the negative impact of foreign currency translation.

The productivity ratio was 59.4% compared to 55.6%. On an adjusted basis, the productivity ratio was 53.7% compared to 52.8%.

Q4 2022 vs Q3 2022

Non-interest expenses were up $338 million or 8% including adjusting items of $242 million versus $24 million in the prior quarter (refer to Non-GAAP Measures starting on page 17). Adjusted non-interest expenses were up $120 million or 3%. The increase was due to higher professional fees, performance-based compensation, advertising and technology-related costs, and the negative impact of foreign currency translation. Partly offsetting were other employee benefits and share-based compensation expenses.

The productivity ratio was 59.4% compared to 53.7%. On an adjusted basis, the productivity ratio was 53.7% compared to 53.4%.

Provision for income taxes

Q4 2022 vs Q4 2021

The effective tax rate was 18.5% compared to 21.2%. On an adjusted basis, the effective tax rate was 17.6% compared to 21.5% due primarily to higher income from lower tax rate jurisdictions and higher tax-exempt income in the quarter.

Q4 2022 vs Q3 2022

The effective tax rate was 18.5% compared to 18.8% in the previous quarter. On an adjusted basis, the effective tax rate was 17.6% compared to 18.8% in the previous quarter due primarily to higher tax-exempt income.

Trending Analysis

T17 Quarterly financial highlights

	For the three months ended							
($ millions)	**October 31 2022**	July 31 2022	April 30 2022	January 31 2022	October 31 2021	July 31 2021	April 30 2021	January 31 2021
Reported results								
Net interest income	**$ 4,622**	$ 4,676	$ 4,473	$ 4,344	$ 4,217	$ 4,217	$ 4,176	$ 4,351
Non-interest income	**3,004**	3,123	3,469	3,705	3,470	3,540	3,560	3,721
Total revenue	**$ 7,626**	$ 7,799	$ 7,942	$ 8,049	$ 7,687	$ 7,757	$ 7,736	$ 8,072
Provision for credit losses	**529**	412	219	222	168	380	496	764
Non-interest expenses	**4,529**	4,191	4,159	4,223	4,271	4,097	4,042	4,208
Income tax expense	**475**	602	817	864	689	738	742	702
Net income	**$ 2,093**	$ 2,594	$ 2,747	$ 2,740	$ 2,559	$ 2,542	$ 2,456	$ 2,398
Basic earnings per share ($)	**1.64**	2.10	2.16	2.15	1.98	2.00	1.89	1.87
Diluted earnings per share ($)	**1.63**	2.09	2.16	2.14	1.97	1.99	1.88	1.86
Net interest margin (%)(1)	**2.18**	2.22	2.23	2.16	2.17	2.23	2.26	2.27
Effective tax rate (%)(2)	**18.5**	18.8	22.9	24.0	21.2	22.5	23.2	22.7
Adjusted results(1)								
Adjusting items impacting non-interest income and total revenue (Pre-tax)								
Net loss on divestitures and wind-down of operations	**$ 361**	$ –	$ –	$ –	$ –	$ –	$ –	$ –
Adjusting items impacting non-interest expenses (Pre-tax)								
Amortization of acquisition-related intangible assets	**24**	24	24	25	25	24	26	28
Restructuring and other provisions	**85**	–	–	–	188	–	–	–
Support costs for the Scene+ loyalty program	**133**	–	–	–	–	–	–	–
Total non-interest expenses adjustments (Pre-tax)	**242**	24	24	25	213	24	26	28
Total impact of adjusting items on net income before taxes	**603**	24	24	25	213	24	26	28
Total impact of adjusting items on income tax expense	**(81)**	(7)	(6)	(7)	(56)	(6)	(7)	(8)
Total impact of adjusting items on net income	**522**	17	18	18	157	18	19	20
Adjusted net income	**$ 2,615**	$ 2,611	$ 2,765	$ 2,758	$ 2,716	$ 2,560	$ 2,475	$ 2,418
Adjusted diluted earnings per share	**$ 2.06**	$ 2.10	$ 2.18	$ 2.15	$ 2.10	$ 2.01	$ 1.90	$ 1.88

(1) Refer to Non-GAAP Measures starting on page 17.
(2) Refer to Glossary on page 133 for the description of the measure.

On a reported and adjusted basis, earnings have generally trended upward mainly from higher net interest income driven by steady loan and deposit growth, and prudent expense management. This has been partly offset by a rising trend in provision for credit losses, driven by declining reversals of provisions for credit losses on performing loans.

Canadian Banking results over the period have been driven by strong revenue growth and generally lower provision for credit losses as a result of improved credit quality expectations.

International Banking results have trended upward over the period. Provision for credit losses have generally decreased due to lower formations and improved credit quality, and expenses remain well controlled, driven by cost management initiatives.

Global Wealth Management has delivered consistent earnings over the period driven by revenue growth and positive operating leverage. Recent quarters have been impacted by adverse market conditions resulting in lower fee based assets and revenues.

Global Banking and Markets results are affected by market conditions that impact revenue from client activity in the capital markets and corporate and investment banking businesses. Provision for credit losses have generally decreased over the period.

Provision for credit losses

Provision for credit losses have generally trended downward during the period driven by performing loan provision reversals and lower impaired loan provisions. Recent quarters were impacted by a less favourable macroeconomic forecast.

Non-interest expenses

Non-interest expenses have been relatively stable over the period, with certain quarters impacted by seasonality or adjusting items. The trend has been driven by the favourable impact of foreign currency translation and ongoing expense management and efficiency initiatives.

Provision for income taxes

The effective tax rate was 18.5% this quarter and averaged 21.7% over the period. Effective tax rates were impacted by divestitures, varying levels of provision for credit losses and net income earned in foreign jurisdictions, as well as the variability of tax-exempt dividend income and inflationary benefits.

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 thereby 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 four business operating segments for 2022.

CANADIAN BANKING

Canadian Banking reported net income attributable to equity holders of $4,763 million in 2022, compared to $4,155 million in the prior year. Adjusted net income to equity holders was $4,779 million, an increase of $608 million or 15%. The increase was due primarily to higher revenues driven by strong volume growth, and lower provision for credit losses, partially offset by higher non-interest expenses. Return on equity was 26.3% compared to 25.2% in the prior year. Adjusted return on equity was 26.4% compared to 25.3% in the prior year.

INTERNATIONAL BANKING

Net income attributable to equity holders was $2,418 million, an increase of $595 million. Adjusted net income attributable to equity holders was $2,446 million, an increase of $591 million. The increase was due largely to higher net interest income and lower provisions for credit losses, a lower effective tax rate from inflation benefits, partly offset by the negative impact of foreign currency translation. Return on equity was 12.9% compared to 10.4% in the prior year. Adjusted return on equity was 13.0% compared to 10.6% in the prior year.

GLOBAL WEALTH MANAGEMENT

Net income attributable to equity holders was $1,556 million, compared to $1,565 million in the prior year. Adjusted net income attributable to equity holders was $1,583 million, a decrease of $9 million or 1%. Higher net interest income and brokerage revenues were offset by lower mutual fund fees, higher volume related expenses, and the impact of elevated performance fees in the prior year. Return on equity was 16.2% compared to 16.7% in the prior year. Adjusted return on equity was 16.5% compared to 17.0% in the prior year.

GLOBAL BANKING AND MARKETS

Global Banking and Markets reported net income attributable to equity holders of $1,911 million, a decrease of $164 million or 8% from last year. The decline was due primarily to lower income in capital markets, higher non-interest expenses, and lower reversal on provision for credit losses, partially offset by higher revenue in business banking. Return on equity was 14.3% compared to 16.5% last 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

T18 Financial performance – Reported

For the year ended October 31, 2022 ($ millions)	Canadian Banking	International Banking	Global Wealth Management	Global Banking and Markets	Other(1)	Total
Net interest income(2)	$ 9,001	$ 6,900	$ 764	$ 1,630	$ (180)	$ 18,115
Non-interest income(2)	3,029	2,827	4,617	3,542	(714)	13,301
Total revenue(2)	12,030	9,727	5,381	5,172	(894)	31,416
Provision for credit losses	209	1,230	6	(66)	3	1,382
Non-interest expenses	5,388	5,212	3,259	2,674	569	17,102
Provision for income taxes (2)	1,670	618	551	653	(734)	2,758
Net income	$ 4,763	$ 2,667	$ 1,565	$ 1,911	$ (732)	$ 10,174
Net income attributable to non-controlling interests in subsidiaries	–	249	9	–	–	258
Net income attributable to equity holders of the Bank	$ 4,763	$ 2,418	$ 1,556	$ 1,911	$ (732)	$ 9,916
Return on equity(%) (3)	26.3%	12.9%	16.2%	14.3%	–%	14.8%
Total average assets ($ billions)	$ 430	$ 207	$ 33	$ 445	$ 167	$ 1,282
Total average liabilities ($ billions)	$ 332	$ 152	$ 47	$ 414	$ 263	$ 1,208

(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 Non-GAAP Measures on page 17 for the description of the measure.

For the year ended October 31, 2021 ($ millions)	Canadian Banking	International Banking	Global Wealth Management	Global Banking and Markets	Other(1)	Total
Net interest income(2)	$ 8,030	$ 6,625	$ 628	$ 1,436	$ 242	$ 16,961
Non-interest income(2)	2,868	2,993	4,752	3,587	91	14,291
Total revenue(2)	10,898	9,618	5,380	5,023	333	31,252
Provision for credit losses	333	1,574	2	(100)	(1)	1,808
Non-interest expenses	4,951	5,254	3,255	2,458	700	16,618
Provision for income taxes (2)	1,459	635	549	590	(362)	2,871
Net income	$ 4,155	$ 2,155	$ 1,574	$ 2,075	$ (4)	$ 9,955
Net income attributable to non-controlling interests in subsidiaries	–	332	9	–	(10)	331
Net income attributable to equity holders of the Bank	$ 4,155	$ 1,823	$ 1,565	$ 2,075	$ 6	$ 9,624
Return on equity(%) (3)	25.2%	10.4%	16.7%	16.5%	–%	14.7%
Total average assets ($ billions)	$ 381	$ 194	$ 29	$ 401	$ 152	$ 1,157
Total average liabilities ($ billions)	$ 313	$ 149	$ 45	$ 385	$ 193	$ 1,085

(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 Non-GAAP Measures on page 17 for the description of the measure.

T18A Financial performance – Adjusted

For the year ended October 31, 2022 ($ millions) (1)	Canadian Banking	International Banking	Global Wealth Management	Global Banking and Markets	Other	Total
Net interest income	$ 9,001	$ 6,900	$ 764	$ 1,630	$ (180)	$ 18,115
Non-interest income	3,029	2,827	4,617	3,542	(353)	13,662
Total revenue	12,030	9,727	5,381	5,172	(533)	31,777
Provision for credit losses	209	1,230	6	(66)	3	1,382
Non-interest expenses	5,366	5,173	3,223	2,674	351	16,787
Provision for income taxes	1,676	629	560	653	(659)	2,859
Net income	$ 4,779	$ 2,695	$ 1,592	$ 1,911	$ (228)	$ 10,749
Net income attributable to non-controlling interests in subsidiaries	–	249	9	–	1	259
Net income attributable to equity holders of the Bank	$ 4,779	$ 2,446	$ 1,583	$ 1,911	$ (229)	$ 10,490

(1) Refer to Non-GAAP Measures on page 17 for the description of the adjustments.

For the year ended October 31, 2021 ($ millions) (1)	Canadian Banking	International Banking	Global Wealth Management	Global Banking and Markets	Other	Total
Net interest income	$ 8,030	$ 6,625	$ 628	$ 1,436	$ 242	$ 16,961
Non-interest income	2,868	2,993	4,752	3,587	91	14,291
Total revenue	10,898	9,618	5,380	5,023	333	31,252
Provision for credit losses	333	1,574	2	(100)	(1)	1,808
Non-interest expenses	4,929	5,209	3,219	2,458	512	16,327
Provision for income taxes	1,465	648	558	590	(313)	2,948
Net income	$ 4,171	$ 2,187	$ 1,601	$ 2,075	$ 135	$ 10,169
Net income attributable to non-controlling interests in subsidiaries	–	332	9	–	–	341
Net income attributable to equity holders of the Bank	$ 4,171	$ 1,855	$ 1,592	$ 2,075	$ 135	$ 9,828

(1) Refer to Non-GAAP Measures on page 17 for the description of the adjustments.

Canadian Banking

2022 Achievements

Accelerated business performance

- Further solidified a top-three position in lending within Canada with growth across market share measures.
- Delivered record Net Customer Growth over the past 12 months, driven by stronger acquisition and reduced attrition, with a focus on priority segments including Physicians and New to Canada.
- Expanded the Business Bank, driven by investments in technology including an end-to-end digital credit work-flow tool, enhanced pricing engine, and Salesforce.
- Digital sales units exceeded full year target, with strong growth across key products as consumer demand returned to pre-pandemic levels.

Winning team culture

- Reinforced commitment to advancing the inclusion of women and creating a more equitable and diverse workplace, and reached 50% representation of women at the VP level.
- Received a third consecutive recognition as one of the Best Workplaces™ in Canada by the Great Place to Work®; Scotiabank was the only Canadian headquartered company and only financial institution to be recognized in the ranking.

Superior customer experience

- Launched Scotia Smart Investor in partnership with Global Wealth Management, a new digital hybrid investment tool that delivers goals-based investment advice to retail customers, with over $4 billion in investment volumes to date.
- Introduced Sleep Advisor by Scotia Advice+, a series of investment tools including a Sleep Advisor hotline and online Sleep Advisor Hub on the Advice+ Centre, designed to help ease the financial planning concerns of our customers.
- Announced commitment of $10 billion in capital deployed by 2025 for Women-led businesses.
- Launched Scotiabank's Black-Led Business Financing Program that commits to providing $100 million in capital via term financing for both start-ups and established Black-led businesses.

Digital enablement

- Launched Scotia Smart Money by Advice+, a new digital suite of smart tools that provide customers with personalized insights, advice, and control at their fingertips to help customers and advisors develop and implement a sound financial plan.
- Roll-out of digital capabilities delivered continued progress with a steady increase in digital adoption and active digital and mobile users.

Scale our unique partnerships and assets

- Launched Scene+ as an integrated loyalty offering, with over 1 million new Scene+ members joining the program since the launch of the partnership with Empire; secured partnership with Home Hardware.
- Released inaugural ScotiaRISE Impact Report, which showcases more than 200 community partnerships, and $26 million in community investments globally.

Select Awards

- Received award for Best Use of Technology for Customer Experience Overall in The Digital Banker's 2022 Global Digital CX Banking Awards.
- Earned a top spot in The Globe and Mail's 2022 Women Lead Here list and recognized for Best Corporate Sustainability.

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 and Commercial Banking customers. It serves these customers through its network of 941 branches and 3,725 automated banking machines (ABMs), as well as online, mobile and telephone banking, and specialized sales teams. Canadian Banking also provides an alternative self-directed banking solution to over 2 million Tangerine Bank customers. Canadian Banking is comprised of the following areas:

- Retail banking provides financial advice and solutions along with day-to-day banking products, including debit cards, chequing accounts, credit cards, investments, mortgages, personal loans and related creditor insurance products to retail customers, including automotive dealers and their customers, providing retail automotive financing solutions. Tangerine Bank provides day-to-day banking products, including chequing and saving accounts, credit cards, mortgages, loans and investments to self-directed customers.
- Business banking delivers advice and a full suite of lending, deposit, cash management and trade finance solutions to small, medium, and large businesses, including the Roynat franchise which provides clients innovative financing alternatives through both public and private markets.

Strategy

Canadian Banking continued to prioritize providing customer and employee support initiatives throughout 2022. This included focusing on the health and safety of both customers and employees, supporting Retail and Business Banking customers financially, while delivering accelerated revenue and earnings growth to solidify a top-3 position in Canada across key market share measures.

Canadian Banking will continue to execute its long-term strategy to deliver stable and consistent earnings, including businesses and products that deliver higher returns on equity. Ongoing efforts focus on building stronger relationships with customers to increase engagement and loyalty, investing in digital and analytics capabilities to understand and anticipate customer needs, and developing a high-quality and diverse team of Scotiabank employees.

2023 Priorities

- **Deliver on strategic initiatives:** Continue to deliver consistent and stable long-term earnings growth by enhancing return on equity across Retail Banking, Business Banking and Tangerine.
- **Deliver a differentiated customer experience:** Progress toward becoming the #1 bank for customers, by providing differentiated focus, service, and advice to drive deeper relationships, loyalty and customer engagement.
- **Strengthen winning team culture:** Continue to instill a winning and inclusive culture, with a focus on prioritizing customers and improving sustainable business performance, further strengthening team-focused engagement.
- **Diversity & Inclusion:** Continue to build an inclusive workplace where all employees can contribute and succeed.
- **Accelerate data & analytics, technology, and digital capabilities:** Strengthen capabilities across data, technology and digital to support salesforce enablement, customer self-serve and assisted experiences, and insight-driven reporting and decision-making.
- **Leverage unique partnerships and assets:** Further utilize and expand dynamic long-term partnerships and assets, including MLSE, SCENE+ loyalty program, and the relationship with Global Wealth Management, in order to generate customer awareness, engagement, and growth across the Canadian Banking franchise.

T19 Canadian Banking financial performance

($ millions)	2022	2021
Reported results		
Net interest income(1)	**$ 9,001**	$ 8,030
Non-interest income(1)(2)	**3,029**	2,868
Total revenue(1)	**12,030**	10,898
Provision for credit losses	**209**	333
Non-interest expenses	**5,388**	4,951
Income tax expense	**1,670**	1,459
Net income	**$ 4,763**	$ 4,155
Net income attributable to non-controlling interests in subsidiaries	**–**	–
Net income attributable to equity holders of the Bank	**$ 4,763**	$ 4,155
Key ratios and other financial data		
Return on equity(3)	**26.3%**	25.2%
Productivity(1)(4)	**44.8%**	45.4%
Net interest margin(3)	**2.24%**	2.23%
Provision for credit losses – performing (Stages 1 and 2)	**$ (343)**	$ (357)
Provision for credit losses – impaired (Stage 3)	**$ 552**	$ 690
Provision for credit losses as a percentage of average net loans and acceptances (4)	**0.05%**	0.09%
Provision for credit losses on impaired loans as a percentage of average net loans and acceptances (4)	**0.13%**	0.18%
Net write-offs as a percentage of average net loans and acceptances (4)	**0.13%**	0.19%
Selected Consolidated Statement of Financial Position data (average balances)		
Earning assets(3)	**$ 425,436**	$ 376,670
Total assets	**429,528**	380,772
Deposits	**307,985**	294,499
Total liabilities	**332,453**	313,028

(1) Taxable equivalent basis (TEB).
(2) Includes net income from investments in associated corporations of $64 (2021 – $87).
(3) Refer to Non-GAAP Measures on page 17 for the description of the measure.
(4) Refer to Glossary on page 133 for the description of the measure.

T19A Adjusted Canadian Banking financial performance(1)

($ millions)	2022	2021
Adjusted results		
Net interest income	**$ 9,001**	$ 8,030
Non-interest income	**3,029**	2,868
Total revenue	**12,030**	10,898
Provision for credit losses	**209**	333
Non-interest expenses(2)	**5,366**	4,929
Income before taxes	**6,455**	5,636
Income tax expense	**1,676**	1,465
Net income	**$ 4,779**	$ 4,171
Net income attributable to non-controlling interests in subsidiaries (NCI)	**–**	–
Net income attributable to equity holders	**$ 4,779**	$ 4,171

(1) Refer to Non-GAAP Measures on page 17 for the description of the adjustments.
(2) Includes adjustment for Amortization of acquisition-related intangible assets of $22 (2021 – $22).

Financial Performance

Net income

Canadian Banking reported net income attributable to equity holders of $4,763 million, compared to $4,155 million. Adjusted net income to equity holders was $4,779 million, an increase of $608 million or 15%. The increase was due primarily to higher revenues driven by strong volume growth, and lower provision for credit losses, partially offset by higher non-interest expenses.

Average assets and liabilities

Average assets increased $49 billion or 13% to $430 billion. The growth included $33 billion or 14% in residential mortgages, $13 billion or 21% in business loans and acceptances, $1 billion or 2% in personal loans, and $1 billion or 7% in credit card loans.

Average liabilities increased $19 billion or 6% to $332 billion. The growth included $8 billion or 8% in non-personal deposits and $5 billion or 3% in personal deposits.

Revenues

Revenues of $12,030 million increased $1,132 million or 10%, due to higher net interest income and non-interest income.

Net interest income

Net interest income of $9,001 million increased $971 million or 12%, due primarily to strong loan and deposit growth and margin expansion. The net interest margin increased one basis point to 2.24%, due primarily to higher deposit spreads and the impact of the Bank of Canada rate increases, partly offset by lower loan spreads.

Non-interest income

Non-interest income of $3,029 million increased $161 million or 6%. The increase was due primarily to higher banking revenue, foreign exchange fees, mutual fund distribution fees, and insurance revenues, partly offset by lower income from associated corporations and elevated private equity gains in the prior year.

Retail Banking

Total retail banking revenues were $8,969 million, an increase of $577 million or 7%. Net interest income increased $472 million or 7%, primarily driven by strong loan and deposit growth, partially offset by margin compression. Non-interest income increased $105 million or 5%, due primarily to higher banking revenue, foreign exchange fees, and insurance revenues, partly offset by lower income from associated corporations.

Business Banking

Total business banking revenues increased $555 million or 22% to $3,061 million. Net interest income increased $499 million or 31% due primarily to strong loan and deposit growth, and margin expansion. Non-interest income increased $56 million or 6% due primarily to higher credit fees and card revenues, partially offset by elevated private equity gains in the prior year.

Provision for credit losses

The provision for credit losses was $209 million, a decrease of $124 million. The provision for credit losses ratio was five basis points, a decrease of four basis points.

Provision for credit losses on performing loans was a net reversal of $343 million, compared to a net reversal of $357 million in the prior year. The provision reversal this period was driven primarily by improved retail portfolio credit quality expectations, partly offset by the less favourable macroeconomic forecast and portfolio growth.

Provision for credit losses on impaired loans was $552 million compared to $690 million, a decrease of $138 million due primarily to lower retail provisions driven by stable credit quality. The provision for credit losses ratio on impaired loans was 13 basis points, a decrease of five basis points.

Non-interest expenses

Non-interest expenses were $5,388 million, up $437 million or 9%, due primarily to higher technology, personnel, and advertising costs to support business growth.

Provision for income taxes

The effective tax rate of 26.0% was in line with the prior year.

Outlook

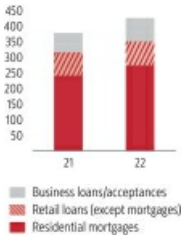
Revenue growth in the Canadian Bank is expected to be driven by deposit and loan growth across Retail and Business Banking and the net interest margin is expected to remain stable. Residential mortgage growth is expected to decelerate driven by a less robust housing market and higher borrowing rates. Maintaining strong expense discipline while selectively investing in strategic growth initiatives will be a primary objective for Canadian Banking to continue to generate positive operating leverage. Earnings are expected to be impacted by normalizing provision for credit losses and a higher tax rate. Customer acquisition supported by our expanding loyalty program remains a priority.

C6 **Total revenue by sub-segment**(1) $ millions

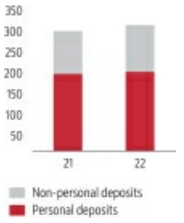


(1) Prior periods have been restated to conform to the current position.

C7 **Average loans and acceptances** $ billions



C8 **Average deposits** $ billions



International Banking

2022 Achievements

Improved Business Performance

- Delivered steady loan growth, with all Pacific Alliance countries growing in line or better than the market in residential mortgages and commercial loans, balanced by deposit growth.
- Prudently managed expenses supported by cost reduction initiatives and digital progress, despite high inflation across geographies.
- Continued to optimize International Banking's footprint with the acquisition of Grupo Said's remaining 16.8% stake in Scotiabank Chile, increasing Scotiabank's ownership in the Chilean entity to 99.8%.

Acceleration of Growth Drivers

- In Retail, accelerated strategic priorities in the Affluent, Insurance, and Small and Medium Enterprise customer segments.
  - In Affluent, delivered solid customer growth and launched a Digital-first relationship model in Chile.
  - In Insurance, continued positive momentum by launching new product offerings in Mexico, Chile, and Colombia.
  - In the Small and Medium Enterprise segment, launched a new mobile banking platform in Peru and was awarded 'Best Small and Medium Enterprise Bank' by the World Economic Magazine's Award in Chile.
- In Corporate and Commercial, ranked #1 in the Pacific Alliance Loans and #1 in the Latin America ESG bonds league table.

Winning Team

- Launched The Scotiabank Women Initiative in Chile and Jamaica,
- Recognized for gender equality in the workplace, placing #1 in Chile, #3 in Peru, and #4 in Mexico.
- Certified in Chile by Equidad CL as a Top Workplace for LGBTQ+ employees for the fourth year in a row and recognized in Mexico by Equidad MX with a perfect 100% score for LGBTQ+ inclusion in the workplace.
- Recognized by LinkedIn as one of the Best Workplaces to Grow Your Career in Mexico, Colombia, and Chile.

Focused Customer Strategy

- Continued leadership in Customer Experience with positive momentum in Net Promoter Scores (NPS) across most channels and regions, exceeding or meeting the market and becoming the leading bank in Colombia.

Acceleration of Digital Transformation

- Strong digital progress across the Pacific Alliance countries. In Retail Banking, achieved 68% digital sales, 58% digital adoption, and 91% self-serve transactions; Digital users reached 4.4 million in total, with 3.8 million mobile users.
- Launched Scotiabank SelectPay in the Central America and Caribbean region, a customer-centric feature to convert eligible credit card purchases into monthly installments directly on the mobile app.
- Launched new mobile applications for Huawei users in Mexico and Chile and a new digital approval model for mortgages in Colombia, significantly improving online response times.
- Scotiabank has the top-rated mobile banking app in Chile on iOS, Android, and Huawei platforms.

Select Awards

- Recognized as the #1 Best Workplace among Financial Services in Latin America by Great Place to Work for the second year in a row.
- Recognized as "Sustainable Finance Bank of the Year for Latin America and the Caribbean" by LatinFinance and awarded "Outstanding Leadership in Sustainability Transparency" by Global Finance.
- Recognized as the "Best Investment Bank in Chile" by Euromoney and "Investment Bank of the Year" in Chile and Colombia by LatinFinance.
- Scotiabank Chile was recognized as the "Best Digital Bank in Latin America and the Caribbean" by LatinFinance, a testament to the Bank's digital excellence and progress.
- Recognized as the "Top Bank for Best Use of Technology for Customer Experience" by The Digital Banker.
- Named Bank of the Year by Global Finance in Trinidad & Tobago, Bahamas, Turks & Caicos, and Cayman Islands; a recognition for progress in digital transformation, including the launch of Scotia SelectPay.

Business Profile

International Banking is a strong and diverse franchise with over 11 million Retail, Corporate, and Commercial customers. The geographical footprint encompasses the Pacific Alliance countries of Mexico, Chile, Peru, and Colombia, as well as Central America, the Caribbean, and Uruguay. The Bank is well positioned in the Pacific Alliance, providing the connectivity to do business across the Americas through Corporate Banking and Digital leadership. The Bank's core markets in the Pacific Alliance countries demonstrate attractive demographics, opportunities to grow banking penetration, and strong connectivity with Canada and the U.S.

Strategy

As economic conditions evolved throughout the year, International Banking launched a series of initiatives to deliver earnings growth and selectively capture business opportunities in strategic products and segments. These included prudently managing credit risk and maintaining focus on expense management, while executing on the long-term strategy to be a Leading Bank in the Americas.

Underpinning the long-term strategy is the focus on being the preferred choice for customers, leveraging digital engagement to deliver superior customer experience, while driving operational efficiency and outpacing the competition in priority businesses, enabled by a diverse and talented winning team.

2023 Priorities

- **Maintain momentum in business performance:** Continue to improve ROE, aligned with the macroeconomic environment, driven by balanced growth of assets and liabilities, while actively managing expenses.
- **Accelerate growth drivers:** Outpace the competition by continuing to develop a customer-centric value proposition for Retail customers, by expanding Corporate, Commercial, and Capital Markets businesses in the Pacific Alliance, and by scaling International Banking's Wealth Management business in close collaboration with Global Wealth Management.
- **Lead in digital & data and customer experience:** Focus on digital platforms and data to optimize distribution costs, drive impact across all business lines and corporate functions, and achieve best-in-class customer loyalty and engagement.
- **Continue driving winning team and culture:** Lead in diversity and inclusion, providing employees a safe and engaging work environment to attract and retain key talent, and foster a high-performance, results-driven mindset.

T20 International Banking financial performance – Reported

($ millions)	2022	2021
Reported results		
Net interest income(1)	$ 6,900	$ 6,625
Non-interest income(1)(2)	2,827	2,993
Total revenue(1)	9,727	9,618
Provision for credit losses	1,230	1,574
Non-interest expenses	5,212	5,254
Income tax expense(1)	618	635
Net income	$ 2,667	$ 2,155
Net income attributable to non-controlling interests in subsidiaries	249	332
Net income attributable to equity holders of the Bank	$ 2,418	$ 1,823
Key ratios and other financial data		
Return on equity(3)	12.9%	10.4%
Productivity(1)(4)	53.6%	54.6%
Net interest margin(3)(5)	3.96%	3.95%
Provision for credit losses – performing (Stages 1 and 2)	$ 84	(1,005)
Provision for credit losses – impaired (Stage 3)	$ 1,146	2,579
Provision for credit losses as a percentage of average net loans and acceptances (4)	0.82%	1.15%
Provision for credit losses on impaired loans as a percentage of average net loans and acceptances (4)	0.77%	1.88%
Net write-offs as a percentage of average net loans and acceptances (4)	0.79%	1.89%
Selected Consolidated Statement of Financial Position data (average balances)		
Earning assets(3)	$ 188,742	$ 178,906
Total assets	206,550	194,124
Deposits	107,206	103,485
Total liabilities	152,140	148,531

(1) Taxable equivalent basis (TEB).
(2) Includes net income from investments in associated corporations of $250 (2021 – $206).
(3) Refer to Non-GAAP Measures on page 17 for the description of the measure.
(4) Refer to Glossary on page 133 for the description of the measure.
(5) Prior period has been restated to reflect the deduction of non-interest bearing deposits with financial institutions, to align with the Bank's definition.

T20A Adjusted International Banking financial performance(1)

($ millions)	2022	2021
Adjusted results		
Net interest income	$ 6,900	$ 6,625
Non-interest income	2,827	2,993
Total revenue	9,727	9,618
Provision for credit losses	1,230	1,574
Non-interest expenses(2)	5,173	5,209
Income before taxes	3,324	2,835
Income tax expense	629	648
Net income	$ 2,695	$ 2,187
Net income attributable to non-controlling interests (NCI)	249	332
Net income attributable to equity holders	$ 2,446	$ 1,855

(1) Refer to Non-GAAP Measures on page 17 for the description of the adjustments.
(2) Includes adjustment for Amortization of acquisition-related intangible assets of $39 (2021 – $45).

Financial Performance

Net income

Net income attributable to equity holders was $2,418 million, an increase of $595 million. Adjusted net income attributable to equity holders was $2,446 million, an increase of $591 million. The increase was due largely to higher net interest income and lower provision for credit losses and lower provision for income taxes, partly offset by lower non-interest income.

Financial Performance on an Adjusted and Constant Dollar Basis

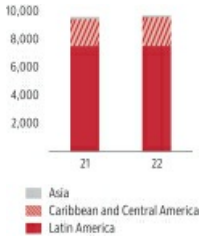
The discussion below on the results of operations is on an adjusted and constant dollar basis. Under the constant dollar basis, prior period amounts are recalculated using current period average foreign currency rates, which is a non-GAAP financial measure (refer to Non-GAAP Measures on page 20). The Bank believes that constant dollar is useful for readers in assessing ongoing business performance without the impact of foreign currency translation and is used by management to assess the performance of the business segment. Ratios are on a reported basis.

T21 International Banking financial performance on adjusted and constant dollar basis

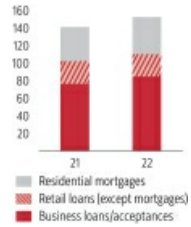
($ millions)	2022	2021
Net interest income(1)	**$ 6,900**	$ 6,478
Non-interest income(1)(2)	**2,827**	2,874
Total revenue(1)	**9,727**	9,352
Provision for credit losses	**1,230**	1,534
Non-interest expenses	**5,173**	5,107
Income tax expense(1)	**629**	616
Net income on constant dollar basis	**$ 2,695**	$ 2,095
Net income attributable to non-controlling interests in subsidiaries on a constant dollar basis	**249**	309
Net income attributable to equity holders of the Bank on a constant dollar basis	**$ 2,446**	$ 1,786
Selected Consolidated Statement of Financial Position data (average balances)		
Total assets	**206,550**	189,590
Total liabilities	**152,140**	144,154

(1) Taxable equivalent basis (TEB).
(2) Includes net income from investments in associated corporations of $250 (2021 – $212).

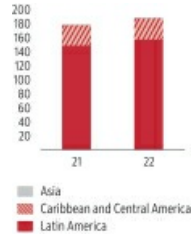
C9 Total revenue by region $ millions



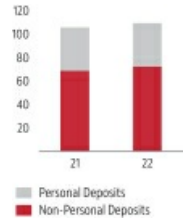
C10 Average loans and acceptances $ billions



C11 Average earning assets by region $ billions



C12 Average deposits $ billions



Net income
Net income attributable to equity holders was $2,418 million, an increase of $662 million or 38%. Adjusted net income attributable to equity holders was $2,446 million, up $660 million or 37%. The increase was due largely to higher net interest income and lower provision for credit losses, partly offset by lower non-interest income.

Assets and liabilities
Average assets of $207 billion increased $17 billion or 9%. Total loans increased by 11%, mainly driven by residential mortgages up 14%, commercial loans up 11%, and personal and credit card loans up 3%.

Average liabilities of $152 billion increased $8 billion or 6%. Total deposits increased by 5% due mainly to higher non-personal deposits up 7% and personal deposits up 2%.

Revenues
Total revenues were $9,727 million, up $375 million or 4%, due to higher net interest income, partly offset by lower non-interest income driven by capital market revenues and gains on investment securities.

Net interest income
Net interest income was $6,900 million, up 7%. The increase was driven by growth in residential mortgages and commercial loans. Net interest margin increased by one basis point to 3.96% due to higher central bank rates and inflation, partly offset by business mix.

Non-interest income
Non-interest income was $2,827 million, down 2%. The decline was driven by lower capital market revenues and lower gains on investment securities, partly offset by higher net fees and commissions.

Latin America
Total revenues were $7,516 million, up $297 million or 4%. Net interest income increased by 7%. Non-interest income was down $72 million or 3%, driven by lower capital market revenues and investment gains, partly offset by higher banking fees.

Caribbean and Central America
Total revenues were $2,067 million, up $103 million or 5%. Net interest income increased by $53 million or 4%. Non-interest income was up $50 million or 8%, mainly driven by higher banking fees and income from associated corporations.

Provision for credit losses
The provision for credit losses was $1,230 million compared to $1,534 million, a decrease of $304 million or 20%. The provision for credit losses ratio was 82 basis points, a decrease of 33 basis points.

Provision for credit losses on performing loans was $84 million, compared to a net reversal of $998 million. The provision this period was driven primarily by retail portfolio growth and the less favourable macroeconomic forecast, partly offset by improved portfolio credit quality. Provision reversals in the prior period were driven primarily by allowance releases built in fiscal year 2020, and credit migration to impaired, primarily in the retail portfolio.

Provision for credit losses on impaired loans was $1,146 million, compared to $2,532 million, a decrease of $1,386 million due primarily to lower retail provisions driven by lower formations primarily in Peru and Colombia. The provision for credit losses ratio on impaired loans was 77 basis points, a decrease of 111 basis points.

Non-interest expenses
Non-interest expenses were $5,212 million, up $63 million or 1%. On an adjusted basis, non-interest expenses increased 1%, due primarily to higher business activity and inflationary pressure, partly offset by benefits from cost reduction initiatives.

Provision for income taxes
The effective tax rate was 18.8% compared to 22.7% last year. On an adjusted basis, the effective tax rate was 18.9%, compared to 22.8% last year due primarily to inflation-related benefits in Mexico and Chile.

Outlook
Revenues in the International Bank are expected to benefit from loan growth and modest net interest margin expansion, as a result of the expected stabilization of interest rates and rate reductions in the second half of 2023. Expenses are expected to grow in line with revenue supported by strong digital progress to deliver positive operating leverage. Earnings are expected to be impacted by normalizing provision for credit losses, and a higher tax rate. The business will continue to invest in cash management, digital adoption, and customer experience to drive growth in the corporate, commercial and retail businesses across the region.

Global Wealth Management

2022 Achievements

Maximize growth in asset management and advisory businesses

- Strong investment results across 1832 Asset Management, with Dynamic Funds having 87% of assets in the top two quartiles over a five-year period, as of October 2022, ranking Dynamic Funds in the top 3 among Independent mutual fund companies.
- Scotia Global Asset Management is ranked #2 in market share in Retail Investment Fund Assets in Canada, and launched 6 new Environmental, Social and Governance (ESG) focused products across Scotia, Dynamic, and Tangerine.
- Launched the newest generation of the iTRADE mobile application, combining a powerful engine with an intuitive interface tailored to investors of all experience levels and seamlessly connected with the mobile banking app.
- Formally introduced an enhanced Multi-Asset Management portfolio management team to clients, designed to build a centre of investment expertise for managing multi-asset, multi-manager investment solutions.
- Tangerine's new product launches (Global ETF Portfolios and Socially Responsible Global Portfolios) topped $1 billion in assets under management in their first year after launch.

Focus on Partnerships

- Continued focus on delivering the entire bank to clients and driving partnerships across businesses. Partnership with Commercial Banking continues to drive high referral volumes, more than double in FY22 vs. FY21.
- Announced development of the Medicus Pension Plan, a multi-employer plan that will provide incorporated physicians with a unique opportunity to access predictable lifetime retirement income. The Plan will provide a lifetime pension based on a physician's personal earnings and years of service and will pool investments among all Plan participants. The Plan is expected to launch within a year, subject to applicable regulatory approvals.
- Launched Scotia Smart Investor, in partnership with Canadian Banking, a new digital hybrid investment tool, to deliver goals-based investment advice to retail customers, with over $4 billion in investment volumes to date.
- Aqueduct Foundation's assets surpassed $1 billion, ranking among the top 15 foundations in Canada by assets.

Expand international capabilities and offering

- Launch of the Total Wealth Advisory model internationally in the Pacific Alliance Countries.
- Expanded institutional sales internationally with a focus on value-added investment mandates in priority Latin American markets, with the US Equity Fund in Mexico surpassing $1 billion in assets under management.
- Scotia Fondos in Peru has reached 20.9% retail mutual fund market share, their highest ever, solidifying a #2 ranking.

Select award highlights

- Scotia Global Asset Management was recognized for its strong performance across Dynamic Funds and ScotiaFunds brands by winning 13 Lipper Fund and 37 FundGrade A+ Awards in 2021, announced in 2022.
- Scotia iTRADE ranked #1 among the Big 5 Banks in the 2021 Surviscor Canadian Online Brokerage Ranking for best overall online experience.
- Scotia Wealth Management was recognized by Global Finance for the second consecutive year winning the 'Best Private Bank' award in two categories: 1) Best private bank in Canada and 2) Best private bank for clients with a net worth between $1 million and $24.9 million.
- Scotia Wealth Management Mexico obtained #1 in Great Place to Work in the Country.

Business Profile

Global Wealth Management is focused on delivering comprehensive wealth management advice and solutions to clients across Scotiabank's footprint. Global Wealth Management serves over 2 million investment fund and advisory clients across 13 countries – administering over $500 billion in assets.

Through organic growth and acquisitions, Global Wealth Management has built a robust client-centric business with comprehensive advice, products, and platforms to meet a broad range of client needs.

Global Wealth Management is comprised of the following businesses:

- **Wealth Management:** Online brokerage (Scotia iTRADE), Mobile investment specialists (Scotiabank), Full-service brokerage (ScotiaMcLeod), Trust, Private Banking, Private Investment Counsel (Scotia Wealth Management, Jarislowsky Fraser, and MD Financial Management)
- **Asset Management:** Retail mutual funds (Scotia & Dynamic Funds), Exchange Traded Funds (Scotia & Dynamic Funds), Liquid Alternatives (Dynamic Funds), Institutional funds (Scotia & Jarislowsky Fraser)

Scotiatrust, ScotiaMcLeod, Scotia iTRADE, Private Banking, Private Investment Counsel, 1832 Asset Management and Dynamic Funds are top performers in key industry metrics.

Strategy

Global Wealth Management continues to execute on its strategic focus on providing clients with strong risk adjusted investment results and financial planning to provide investment solutions to meet their complex needs. The focus continues to be delivering on partnerships and comprehensive advice to best serve clients in the current economic environment and through all market conditions. To best drive that focus, Global Wealth Management is prioritizing investments in digital and investment capabilities, growing the product shelf to serve both retail and institutional clients.

In addition, Global Wealth Management is focused on maximizing its international footprint, including leveraging the Bank's institutional management capabilities in priority markets across Latin America.

2023 Priorities

- **Continue product innovation:** Drive innovation in products to deliver industry-leading investment capabilities and performance through purpose-built solutions for customers across Global Wealth Management's brands and channels.
- **Plan-based, holistic advice:** Deliver the entire bank to new and existing clients with complex needs through the Total Wealth strategy.
- **Invest in digital:** Digitally enable sales and advice to support distribution channels, including proprietary and 3rd party sales.
- **Focus on international:** Maximize international footprint by growing the product shelf, and by enhancing internal capabilities in sales and distributions. Invest and grow the International Wealth business by following the Bank's retail footprint.
- **Enhance winning team culture:** Cultivate a talented, diverse workforce, and foster an environment to keep customers and employees safe, while delivering outstanding results and client experiences.

T22 Global Wealth Management financial performance

($ millions)	2022	2021
Reported results		
Net interest income(1)	$ 764	$ 628
Non-interest income(1)	4,617	4,752
Total revenue(1)	5,381	5,380
Provision for credit losses	6	2
Non-interest expenses	3,259	3,255
Income tax expense	551	549
Net income	$ 1,565	$ 1,574
Net income attributable to non-controlling interests in subsidiaries	9	9
Net income attributable to equity holders of the Bank	$ 1,556	$ 1,565
Key ratios and other financial data		
Return on equity(2)	16.2%	16.7%
Productivity(1)(3)	60.6%	60.5%
Selected Consolidated Statement of Financial Position data (average balances)		
Earning assets(2)	$ 22,452	$ 18,478
Total assets	32,721	28,965
Deposits	38,663	37,013
Total liabilities	46,906	44,950
Other ($ billions)		
Assets under administration(3)	$ 580	$ 597
Assets under management(3)	$ 311	$ 346

(1) Taxable equivalent basis (TEB).
(2) Refer to Non-GAAP Measures on page 17 for the description of the measure.
(3) Refer to Glossary on page 133 for the description of the measure.

T22A Adjusted Global Wealth Management financial performance(1)

($ millions)	2022	2021
Adjusted results		
Net interest income	$ 764	$ 628
Non-interest income	4,617	4,752
Total revenue	5,381	5,380
Provision for credit losses	6	2
Non-interest expenses(2)	3,223	3,219
Income before taxes	2,152	2,159
Income tax expense	560	558
Net income	$ 1,592	$ 1,601
Net income attributable to non-controlling interests in subsidiaries (NCI)	9	9
Net income attributable to equity holders	$ 1,583	$ 1,592

(1) Refer to Non-GAAP Measures on page 17 for the description of the adjustments.
(2) Includes adjustment for Amortization of acquisition-related intangible assets of $36 (2021 – $36).

Financial Performance

Net income

Net income attributable to equity holders was $1,556 million, compared to $1,565 in the prior year. Adjusted net income attributable to equity holders was $1,583, a decrease of $9 million or 1%. Higher net interest income and brokerage revenues were offset by lower mutual fund fees driven by market conditions, higher volume-related expenses, and the 4% impact of elevated seasonal performance fees in the prior year.

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

Assets under management of $311 billion decreased $35 billion or 10% driven by market depreciation. Assets under administration of $580 billion decreased $17 billion or 3% due primarily to market depreciation, partly offset by higher net sales.

Revenues

Revenues were $5,381 million in line with the prior year. Higher net interest income and brokerage revenues were offset by lower mutual fund fees driven by market conditions and the 2% impact of elevated seasonal performance fees in the prior year.

Net interest income

Net interest income of $764 million increased $136 million or 22%, due primarily to solid loan and deposit growth, and margin expansion.

Non-interest income

Non-interest income was $4,617 million, down $135 million or 3%, due primarily to elevated performance fees in the prior year and lower mutual fund fees, partly offset by higher brokerage revenues.

Canada

Revenues of $4,743 million were down $40 million or 1%. Elevated performance fees in the prior year and lower mutual fund fees were partly offset by higher brokerage revenues and net interest income, driven by loan and deposit growth and margin expansion.

International

Revenues of $638 million were up $41 million or 7%. The growth was due primarily to higher net interest income from loan and deposit growth, partly offset by lower non-interest income.

Provision for credit losses

The provision for credit losses was $6 million, compared to $2 million, driven primarily by the less favourable macroeconomic forecast. The provision for credit losses ratio was three basis points, an increase of two basis points.

Non-interest expenses

Non-interest expenses of $3,259 million were up $4 million. Higher personnel and technology costs to support business initiatives, and higher volume-related expenses, were partially offset by the impact of elevated seasonal performance fees in the prior year.

Provision for income taxes

The effective tax rate was 26.0% compared to 25.8% in the prior year.

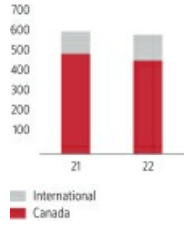
Outlook

Revenue growth in Global Wealth Management is expected to moderate driven by retail mutual fund volume growth through active management and multi-brand distribution in Canada; solid growth across our key international markets; and continued momentum across our global advisory businesses as we deliver the entire bank to high-net-worth clients. Earnings are expected to remain stable in 2023, reflecting the slowing economic backdrop and a higher tax rate. Global Wealth Management will continue to invest in the business while remaining focused on managing expense growth in line with revenue growth. Global Wealth Management earnings would be expected to improve in line with better than anticipated market conditions.

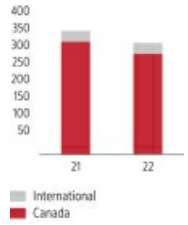
C13 Total revenue by sub-segment $ millions



C14 Wealth management assets under administration (AUA) $ billions, as at October 31



C15 Wealth management assets under management (AUM) $ billions, as at October 31



Global Banking and Markets

2022 Achievements

Increase relevance to corporate clients and capture more of the non-lending wallet

- Continued to grow origination platform by leveraging sector and product expertise and developing unique, differentiated solutions as demonstrated by top-3 Canadian league table rankings in Loans and Debt Capital Markets.
- Continued to enhance position as a leader in the Environmental, Social, and Governance space with an award-winning Sustainable Finance team.
- Continued to invest in client-focused initiatives by modernizing technology infrastructure and platforms across Fixed Income, Foreign Exchange and Equities businesses to offer best in class execution and widen products and services offerings.

Strengthen capital markets offerings

- Increased electronic trading execution across products and regions through ScotiaRed, an electronic trading solution for capital markets, including a new algorithmic trading platform, which earned a #1 ranking for trading performance amongst some of the largest US quant funds.
- Launched Scotia TranXactTM, a digital payments platform, delivering on-demand access to payments and cash management Application Programming Interfaces (APIs) for business banking clients.
- Launched self-serve feature on ScotiaConnectTM for clients to personalize their consolidated billing statement and extended the new International Money Transfer digital payment capability to all businesses, offering more options to send money easily and securely worldwide.

Build presence in the Americas

- Continued progress on multi-year strategy of creating a top-tier local and cross-border wholesale banking business in the Americas.
- Continued US buildout by executing on strategic hiring plans, accelerating growth in focus sectors of Healthcare, Technology, and Consumer, Industrial, and Retail (CIR), and enhancing product capabilities including expanding corporate equity derivatives and collateral management and funding.
- Leveraged infrastructure transformation in Mexico and are now recognized as a Primary Dealer in the country, rounding out the Bank's unique offering in all key Pacific Alliance markets.

Select awards and deal highlights

Awards

- The Banker Investment Banking Awards 2022: Investment Bank of the Year for the Americas
- Global Finance Sustainable Finance Awards: Outstanding Leadership in Social Bonds, Outstanding Leadership in Sustainable Bonds and Outstanding Leadership in Transition/Sustainability Linked Loans in North America
- Euromoney Awards for Excellence: Best Bank for Sustainable Finance in North America
- Euromoney Best Investment Bank, Scotiabank Chile

Deal highlights

- Joint Bookrunner on a number of notable mandates this year, including:
  - Joint Bookrunner and Co-Lead Solicitation Agent for multiple marquee offerings relating to Rogers Communications' acquisition of Shaw Communications, including Rogers' C$4.25 billion cross-border jumbo acquisition financing – representing the largest Canadian dollar transaction of all time
  - Anglian Water's inaugural 10-year $350 million transaction – representing the first corporate Maple of 2022 and the first Green Corporate Maple transaction ever
  - John F. Kennedy Airport US$6.6 billion credit facility to finance the construction of the new Terminal One – record private investment for a U.S. airport terminal
  - TC Energy's ~$1.8 billion offering of common shares, representing the largest treasury offering from a Canadian energy company in over 5 years and Scotiabank's first bookrunner role for this issuer's common equity
  - Northwest Healthcare raised the most proceeds via equity and equity-linked transactions in the Canadian Real Estate sector in Fiscal 2022, with Scotiabank acting as a Joint Bookrunner on each of their transactions, raising a total of ~$328 million
  - United Mexican States US$981 million sustainable sovereign bonds – first ESG bond issues by a Mexican entity
- Financial Advisor on a number of marquee transactions this year, including:
  - Healthcare Realty's US$18 billion strategic combination with Healthcare Trust of America
  - Phoenix Tower's acquisition of up to 3,800 wireless towers in Chile from WOM valued at US$930 million
  - Brookfield Infrastructure's sale of third and final stake in Chile-based toll road concession Autopista Vespucio Norte and Tunel San Cristobal
  - Mantos Copper's US$3.3 billion combination with Capstone Mining
  - Fairfax's acquisition of Recipe Unlimited valued at $1.5 billion

Business Profile

Global Banking and Markets (GBM) provides corporate clients with lending and transaction services, investment banking advice and access to capital markets. GBM is a full-service wholesale bank in the Americas, with operations in 21 countries, serving clients across Canada, the United States, Latin America, Europe and Asia-Pacific.

Strategy

Global Banking and Markets' vision is to be recognized as the number one Wholesale Bank in the Americas. To achieve this vision, the strategy is grounded in three key pillars: Client, Product, and Geography. GBM is focused on increasing relevance with clients with leading financial advice and solutions and on expanding the Bank's full-service corporate offering, with a key focus on the Americas. GBM is leveraging regional and institutional capabilities and delivering profitable growth for the Bank's shareholders.

2023 Priorities

- **Increase relevance to strategic clients:** Leverage existing expertise to expand into new and growing areas of opportunity, and continue to increase relevance to strategic clients through enhanced analytics.
- **Strengthen capital markets offerings and advisory services:** Continue to invest in origination services and capital markets product offerings, and further advance digital adoption and electronic execution capabilities.
- **Leverage Americas footprint to generate diverse and durable earnings:** Maintain leadership position in Canada, deliver US growth strategy, expand in areas of strength and opportunity in Latin America and continue to leverage Europe and Asia-Pacific to serve global clients with connectivity to the Americas.
- **Enable a winning culture:** Attract, develop, and retain diverse talent in an inclusive and high-performance environment, while keeping the Bank safe.

T23 Global Banking and Markets financial performance

($ millions)	2022	2021
Reported results		
Net interest income(1)	**$ 1,630**	$ 1,436
Non-interest income(1)	**3,542**	3,587
Total revenue(1)	**5,172**	5,023
Provision for credit losses	**(66)**	(100)
Non-interest expenses	**2,674**	2,458
Income tax expense(1)	**653**	590
Net income	**$ 1,911**	$ 2,075
Net income attributable to non-controlling interests in subsidiaries	**–**	–
Net income attributable to equity holders of the Bank	**$ 1,911**	$ 2,075
Key ratios and other financial data		
Return on equity(2)	**14.3%**	16.5%
Productivity(1)(3)	**51.7%**	48.9%
Provision for credit losses – performing (Stages 1 and 2)	**$ (58)**	$ (135)
Provision for credit losses – impaired (Stage 3)	**$ (8)**	$ 35
Provision for credit losses as a percentage of average net loans and acceptances (3)	**(0.06)%**	(0.10)%
Provision for credit losses on impaired loans as a percentage of average net loans and acceptances (3)	**(0.01)%**	0.03%
Net write-offs as a percentage of average net loans and acceptances (3)	**(0.02)%**	0.05%
Selected Consolidated Statement of Financial Position data (average balances)		
Trading assets	**$ 129,939**	$ 134,602
Loans and acceptances	**108,722**	91,809
Earning assets(2)	**401,109**	363,889
Total assets	**444,957**	400,909
Deposits	**169,591**	156,321
Total liabilities	**414,134**	385,096

(1) Taxable equivalent basis (TEB).
(2) Refer to Non-GAAP Measures on page 17 for the description of the measure.
(3) Refer to Glossary on page 133 for the description of the measure.

Financial Performance

Net income

Global Banking and Markets reported net income attributable to equity holders of $1,911 million, a decrease of $164 million or 8%. This decline was due to higher non-interest expenses, lower non-interest income, and lower reversal of provision for credit losses, partially offset by higher net interest income and the positive impact of positive foreign currency translation.

Average assets and liabilities

Average assets increased by $44 billion or 11% to $445 billion this year, due mainly to increases in business loans and securities purchased under resale agreements.

Average liabilities increased by $29 billion or 8% to $414 billion this year, due mainly to growth in deposits and derivative-related liabilities.

Revenues

Revenues were $5,172 million, an increase of $149 million or 3%. This was due to higher net interest income and the positive impact of foreign currency translation, partly offset by lower non-interest income.

Net interest income

Net interest income of $1,630 million increased by $194 million or 14%. This was due to higher deposit and lending volumes, increased deposit margins, higher loan origination fees, and the positive impact of foreign currency translation, partly offset by higher trading-related funding costs.

Non-interest income

Non-interest income of $3,542 million decreased by $45 million or 1%. This was due mainly to lower underwriting and advisory fees, partly offset by higher trading revenues and the positive impact of foreign currency translation.

Provision for credit losses

The provision for credit losses was a net reversal of $66 million, compared to a net reversal of $100 million. The provision for credit losses ratio increased four basis points to negative six basis points.

Provision for credit losses on performing loans was a net reversal of $58 million, compared to a net reversal of $135 million. The provision reversals this period were driven primarily by reversals of allowances in the energy portfolio as a result of increased commodity prices, partly offset by portfolio growth and the less favourable macroeconomic forecast.

Provision for credit losses on impaired loans was a net recovery of $8 million, a decrease of $43 million due primarily to lower formations and recoveries in the energy sector. The provision for credit losses ratio on impaired loans was negative one basis point, a decrease of four basis points.

Non-interest expenses

Non-interest expenses increased by $216 million or 9% to $2,674 million driven by increases in technology costs to support business development and personnel costs.

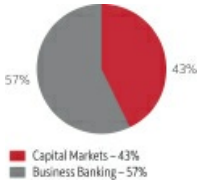
Provision for income taxes

The effective tax rate was 25.5% compared to 22.1% the prior year. The increase was due mainly to prior year recoveries and the change in earnings mix across jurisdictions.

Outlook

Revenue growth in Global Banking and Markets is expected in the Capital Markets business as market conditions improve. Business Banking is also expected to benefit from recent momentum in corporate loan growth and continued focus on acquiring deposits. Growth is expected in our corporate client franchise across core sectors, with focus on Healthcare, Technology and Consumer Industrial and Retail. Higher revenues and disciplined expense management are expected to drive positive operating leverage and more than offset potential increases in provision for credit losses. Global Banking and Markets expects to deliver earnings growth in 2023 by continuing to leverage its unique platform centered in the Americas and strengthening client relationships which will drive revenues.

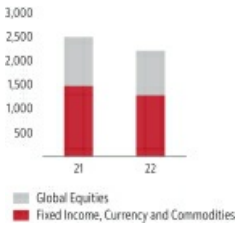
C16 Total revenue



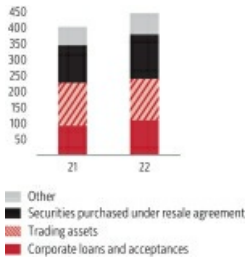
C17 Business banking revenue $ millions



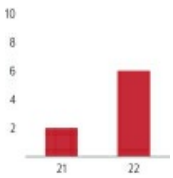
C18 Capital markets revenue by business line $ millions



C19 Composition of average assets $ billions



C20 Trading day losses



Other

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

Financial Performance

T24 Other financial performance

($ millions)	2022	2021
Reported results		
Net interest income(1)	**$ (180)**	$ 242
Non-interest income(1)(2)	**(714)**	91
Total revenue(1)	**(894)**	333
Provision for (recovery of) credit losses	**3**	(1)
Non-interest expenses	**569**	700
Income tax expense(1)	**(734)**	(362)
Net income (loss)	**$ (732)**	$ (4)
Net income attributable to non-controlling interests in subsidiaries	**–**	(10)
Net income (loss) attributable to equity holders	**$ (732)**	$ 6

(1) 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, which are reported on a taxable equivalent basis.
(2) Includes net income from investments in associated corporations of $(60) in 2022 (2021 – $29).

T24A Adjusted Other financial performance(1)

($ millions)	2022	2021
Adjusted results		
Net interest income	**$ (180)**	$ 242
Non-interest income(2)	**(353)**	91
Total revenue	**(533)**	333
Provision for credit losses	**3**	(1)
Non-interest expenses(3)	**351**	512
Income before taxes	**(887)**	(178)
Income tax expense	**(659)**	(313)
Net income (loss)	**$ (228)**	$ 135
Net income (loss) attributable to non-controlling interests (NCI)	**1**	–
Net income (loss) attributable to equity holders	**$ (229)**	$ 135

(1) Refer to Non-GAAP Measures on page 17 for the description of the adjustments.
(2) Includes adjustment for net loss on divestitures and wind-down of operations of $361 (October 31, 2021 – nil).
(3) Includes adjustments for support costs for Scene+ loyalty program of $133 and restructuring and other provisions of $85 (October 31, 2021 – $188).

Net income

The Other segment reported a net loss attributable to equity holders of $732 million in 2022, which includes adjusting items of $503 million (refer to Non-GAAP Measures on page 17). On an adjusted basis, net income attributable to equity holders was a loss of $229 million compared to net income of $135 million in 2021. The decrease of $364 million was due to lower revenues, partly offset by lower taxes and non-interest expenses.

Revenues

Revenues were negative $894 million, which includes $361 million of adjusting items. On an adjusted basis, revenues were negative $533 million, a decrease of $866 million from the prior year, due mainly to higher funding costs resulting from higher interest rates and asset/liability management activities, and lower investment gains.

Non-interest expenses

Non-interest expenses of $569 million included adjusting items of $218 million compared to adjusting items of $188 million in 2021. On an adjusted basis, non-interest expenses were $351 million compared to $512 million in 2021. The decrease of $161 million is due mainly to COVID-19 related costs and the investment in the SCENE loyalty program in the prior year.

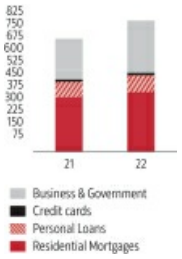
GROUP FINANCIAL CONDITION

T25 Condensed statement of financial position

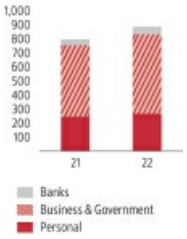
As at October 31 ($ billions)	2022	2021	Change	Volume Change	FX Change
Assets					
Cash, deposits with financial institutions and precious metals	**$ 66.4**	$ 87.1	(24)%	(29)%	5%
Trading assets	**113.2**	146.3	(23)	(26)	3
Securities purchased under resale agreements and securities borrowed	**175.3**	127.7	37	32	5
Investment securities	**110.0**	75.2	46	40	6
Loans	**745.0**	637.0	17	15	2
Other	**139.5**	111.5	25	25	–
Total assets	**$1,349.4**	$1,184.8	14%	11%	3%
Liabilities					
Deposits	**$ 916.2**	$ 797.3	15%	12%	3%
Obligations related to securities sold under repurchase agreements and securities lent	**139.0**	123.5	13	9	4
Other	**211.0**	184.8	14	14	–
Subordinated debentures	**8.5**	6.3	34	29	5
Total liabilities	**$1,274.7**	$1,111.9	15%	12%	3%
Equity					
Common equity(1)	**$ 65.1**	$ 64.8	–%	(3)%	3%
Preferred shares and other equity instruments	**8.1**	6.0	33	33	–
Non–controlling interests in subsidiaries	**1.5**	2.1	(27)	(24)	(3)
Total equity	**$ 74.7**	$ 72.9	3%	3%	–%
Total liabilities and equity	**$1,349.4**	$1,184.8	14%	11%	3%

(1) Includes net impact of foreign currency translation, primarily change in spot rates on the translation of assets and liabilities from functional currency to Canadian dollar equivalent.

C21 Loan portfolio loans & acceptances, $ billions, as at October 31



C22 Deposits $ billions, as at October 31



Statement of Financial Position

Assets

The Bank's total assets were $1,349 billion as at October 31, 2022, up $165 billion or 14% from October 31, 2021, including 3% from the impact of foreign currency translation. Investment securities increased $35 billion due primarily to higher holdings of U.S. government debt. Loans increased $108 billion. Residential mortgages increased $30 billion mainly in Canada. Personal loans and credit cards increased $10 billion reflecting increased consumer spending. Business and government loans increased $68 billion mainly in Canada and the U.S. Securities purchased under resale agreements and securities borrowed increased $48 billion due to higher client demand. Derivative instrument assets increased by $13 billion due to changes in interest rates, foreign exchange rates and higher activity. Other assets increased $15 billion due mainly to higher collateral requirements. Trading securities decreased $34 billion due to market conditions and lower client activity. Cash and deposits with financial institutions decreased $20 billion due primarily to lower balances with central banks.

Liabilities

Total liabilities were $1,275 billion as at October 31, 2022, up $163 billion or 15% from October 31, 2021, including 3% from the impact of foreign currency translation. Total deposits increased $119 billion. Personal deposits of $266 billion increased $22 billion due primarily to growth in Canada. Business and government deposits grew by $86 billion mainly in Canada and the U.S. Deposits by financial institutions increased $10 billion due to higher deposits in Asia and Canada. Obligations related to securities sold under repurchase agreements and securities lent increased by $16 billion due to higher activity and funding requirements. Derivative instrument liabilities increased $24 billion due to changes in interest rates and foreign exchange rates. Other liabilities increased $4 billion due mainly to higher accrued interest.

Equity

Total equity was $75 billion, an increase of $2 billion from October 31, 2021. Equity was higher due to current year earnings of $10 billion and net issuance of preferred shares and other equity instruments of $2 billion. Partly offsetting these items were dividends paid of $5 billion, share buybacks of $3 billion, other comprehensive loss of $2 billion due mainly to change in derivative instruments designated as cash flow hedges and a reduction in non-controlling interests in subsidiaries of $684 million from the Bank's increased ownership in Scotiabank Chile.

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, Group Treasury and Global Risk Management groups take a coordinated approach to implementing the Bank's capital plan.

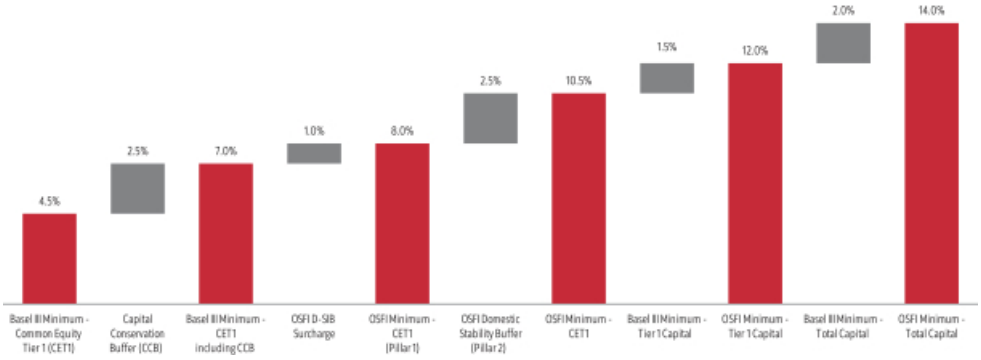
Risk appetite

The risk appetite framework that establishes enterprise-wide risk tolerances in addition to capital limits 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 limits drive behaviour 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

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. 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.

C23 Minimum Regulatory Capital Requirements



The Office of the Superintendent of Financial Institutions, Canada (OSFI) has issued guidelines, reporting requirements and disclosure guidance which are consistent with the international implementation of Basel III. OSFI requires Canadian deposit-taking institutions to meet minimum requirements related to risk-weighted assets of 7%, 8.5% and 10.5% for CET1, Tier 1 and Total Capital ratios, respectively, which includes the capital conservation buffer of 2.5%. 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, in line with the requirements for global systemically important banks. OSFI's minimum Pillar 1 capital ratio requirements, are 8.0%, 9.5% and 11.5% for Common Equity Tier 1, Tier 1 and Total capital ratios, respectively.

In June 2018, OSFI implemented the Domestic Stability Buffer, to be held by Domestic Systemically Important Banks (D-SIBs) as an additional Pillar 2 buffer. Breaches of this buffer will not result in banks being subject to automatic constraints on capital distributions. Instead, OSFI will require a remediation plan to address any shortfall to their minimum. 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.

The Domestic Stability Buffer ranges between 0% and 2.5% of a bank's total risk-weighted assets (RWA). OSFI undertakes a review of the buffer on a semi-annual basis, in June and December, and any changes to the buffer are made public, along with supporting rationale. In exceptional circumstances, OSFI may make and announce adjustments to the buffer in-between scheduled review dates. The Domestic Stability Buffer was set at 2.5% of total risk-weighted assets throughout fiscal 2022.

OSFI's minimum regulatory capital ratio requirements, including all buffers noted above, are: 10.5%, 12.0% and 14.0% for Common Equity Tier 1, Tier 1 and Total capital ratios, respectively. In addition, OSFI may subsequently vary the minimum requirements for individual D-SIBs or groups of D-SIBs, as a supervisory measure.

Leverage ratio

In addition to risk-based capital ratio requirements, Basel III 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. OSFI's Basel III Leverage Ratio Requirements Guideline and Public Disclosure Requirements outline the application and disclosure of the Basel III Leverage ratio in Canada. Institutions are expected to maintain an operating buffer above the 3% minimum.

Total Loss Absorbing Capacity (TLAC)

OSFI has issued its guideline on Total Loss Absorbing Capacity (TLAC), which applies 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 are required to maintain a minimum risk-based Total Loss Absorbing Capacity (TLAC) ratio and a minimum TLAC leverage ratio. TLAC is defined as the aggregate of NVCC Tier 1 capital, NVCC 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 24.0% of risk-weighted assets and 6.75% of leverage ratio exposures. As noted above, OSFI may subsequently vary the minimum TLAC requirements for 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. As at October 31, 2022, the Bank exceeds the OSFI minimum TLAC and TLAC leverage ratios.

Regulatory capital developments

The Bank continues to monitor and prepare for developments impacting regulatory capital requirements.

Leverage Ratio Exclusions

In 2020, in response to COVID-19, OSFI introduced changes to regulations to keep the financial system resilient and well capitalized. For the leverage ratio, OSFI temporarily excluded (i) central bank reserves and (ii) sovereign-issued securities that qualify as High Quality Liquid Assets (HQLA) under the Liquidity Adequacy Requirements guideline from the Leverage ratio exposure measure. Commencing the first quarter of 2022, OSFI discontinued the temporary exclusion of sovereign-issued securities from the Leverage and TLAC Leverage ratio calculations but allowed the continued exclusion of central bank reserves from the exposure measure. In September 2022, OSFI announced that the remaining temporary exclusion of central bank reserves will be discontinued effective April 1, 2023. As at October 31, 2022, the Bank's Leverage ratio included a benefit of approximately 15 basis points from the exclusion of central bank reserves from its exposure measure.

Basel Committee on Banking Supervision – Finalized Basel III Regulatory Capital 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 the remaining Basel III reforms. The previously expected implementation year of 2022 was delayed to 2023.

The final Basel III reforms 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 market risk framework from a Fundamental Review of the Trading Book (FRTB);
- a revised standardized approach for operational risk, which will replace the existing standardized approaches and the advanced measurement approach;
- revisions to the measurement of the leverage ratio and a leverage ratio buffer of 50% of a global systemically important banks'(G-SIBs) risk-weighted capital buffer for global systemically important banks; 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. There is a phase-in period for the 72.5% output floor from 2023 until 2028.

In January 2022, OSFI finalized revisions to its Capital Adequacy Requirements Guideline, Leverage Requirements Guideline and Pillar 3 Disclosures Guideline for D-SIBs. OSFI's requirements are substantially aligned with Basel III with some differences, primarily in retail residential real estate and qualifying revolving retail exposures and with respect to acceleration of the phase-in period of the aggregate output floor to 72.5% by 2026. Implementation timelines are Q2 2023, with exception of CVA and FRTB market risk requirements which are effective Q1 2024.

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 measured and monitored on an ongoing basis 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 and total loss absorbing capacity ratios

The Bank continues to maintain strong, high quality capital levels which position it well for future business growth and opportunities. The CET1 ratio as at October 31, 2022 was 11.5%, a decrease of approximately 80 basis points from the prior year as solid internal capital generation during the year was more than offset by strong organic growth in risk-weighted assets across all business lines, common share buybacks under the Bank's Normal Course Issuer Bid, changes in the valuation of investment securities, and the Bank's increased ownership in Scotiabank Chile.

The Bank's Tier 1 capital ratio was 13.2% as at October 31, 2022, a decrease of approximately 70 basis points from the prior year, due primarily to the above noted impacts to the CET1 ratio, the phase-out impact of approximately $650 million of non-qualifying additional tier 1 instruments, and the Bank's redemption of $500 million of NVCC preferred shares, partly offset by issuances of $1.5 billion and USD $750 million of Limited Recourse Capital Notes (LRCNs).

The Bank's Total capital ratio was 15.3% as at October 31, 2022, a decrease of approximately 60 basis points from 2021, due primarily to the above noted impacts to the Tier 1 capital ratio, the redemption of $1.25 billion of NVCC subordinated debentures, amortization of approximately $325 million of NVCC Tier 2 instruments and the phase-out impact of approximately $250 million of non-qualifying subordinated debentures, partly offset by issuances of $1.75 billion and USD $1.25 billion of NVCC subordinated debentures.

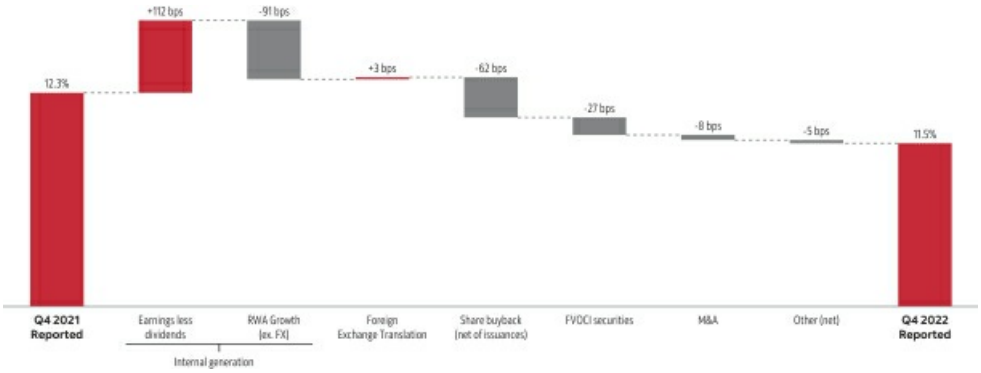
The TLAC ratio was 27.4% as at October 31, 2022, a decrease of 40 basis points from the prior year, mainly from strong growth in risk-weighted assets during the year.

The Leverage ratio was 4.2%, a decrease of approximately 60 basis points from the prior year due primarily to OSFI's discontinuance of the temporary exclusion of sovereign-issued securities from its leverage exposures measure, combined with strong growth in the Bank's on and off-balance sheet assets.

The TLAC Leverage ratio was 8.8%, a decrease of approximately 80 basis points from 2021, due primarily to strong growth in the Bank's on and off-balance sheet assets.

The Bank's capital ratios continue to be in excess of OSFI's minimum capital ratio requirements for 2022 for CET1, Tier 1 and Total Capital. The Bank was well above the OSFI minimum Leverage ratio as at October 31, 2022.

C24 Continuity of Common Equity Tier 1 ratio(1)



(1) This measure has been disclosed in this document in accordance with OSFI Guideline – Capital Adequacy Requirements (November 2018).

T26 Regulatory capital(1) and total loss absorbing capacity (TLAC) (2) ratios

	Basel III	
As at October 31 ($ millions)	2022	2021
Common Equity Tier 1 capital		
Total Common Equity(3)	**$ 65,150**	$ 64,606
Qualifying non-controlling interest in common equity of subsidiaries	**694**	1,322
ECL transitional adjustment	**75**	235
Goodwill and intangibles, net of deferred tax liabilities (4)	**(15,546)**	(15,156)
Threshold related deductions	**–**	–
Net deferred tax assets (excluding those arising from temporary differences)	**(88)**	(174)
Other Common Equity Tier 1 capital deductions(5)	**2,796**	177
Common Equity Tier 1	**53,081**	51,010
Additional Tier 1 capital		
Preferred shares(6)	**300**	800
Subordinated additional Tier 1 capital notes (NVCC)	**3,249**	3,249
Limited recourse capital notes (NVCC)	**4,526**	2,003
Capital instrument liabilities – trust securities (6)	**–**	653
Other Tier 1 capital adjustments(7)	**106**	200
Net Tier 1 capital	**61,262**	57,915
Tier 2 capital		
Subordinated debentures, net of amortization (6)	**7,461**	5,923
Allowance for credit losses eligible for inclusion in Tier 2 and excess allowance (re: IRB approach) (8)	**1,869**	2,106
Qualifying non-controlling interest in Tier 2 capital of subsidiaries	**118**	157
Other Tier 2 capital adjustments	**–**	–
Tier 2 capital	**9,448**	8,186
Total regulatory capital	**70,710**	66,101
Non-regulatory capital elements of TLAC		
External TLAC instruments issued directly by the Bank	**55,337**	49,327
TLAC deductions and other adjustments	**518**	253
TLAC available after deductions	**126,565**	115,681
Risk-weighted assets ($ billions)(1)		
Credit risk	**401.4**	358.8
Market risk	**10.8**	8.1
Operational risk	**50.2**	49.2
Risk-weighted assets	**$ 462.4**	$ 416.1
Regulatory Capital(1) and TLAC(2) ratios		
Common Equity Tier 1	**11.5%**	12.3%
Tier 1	**13.2%**	13.9%
Total	**15.3%**	15.9%
Total loss absorbing capacity	**27.4%**	27.8%
Leverage(9)		
Leverage exposures	**$ 1,445,619**	$ 1,201,766
Leverage ratio	**4.2%**	4.8%
Total loss absorbing capacity leverage ratio	**8.8%**	9.6%

(1) Regulatory capital ratios are determined in accordance with OSFI Guideline – Capital Adequacy Requirements (November 2018).
(2) This measure has been disclosed in this document in accordance with OSFI Guideline – Total Loss Absorbing Capacity (September 2018). Prior period results are shown for comparative purposes and were not a regulatory requirement.
(3) Includes Other Reserves adjusted for regulatory capital purposes.
(4) Reported amounts are based on OSFI's requirements that goodwill relating to investments in associates be classified as goodwill for regulatory reporting purposes.
(5) Other CET1 capital deductions under Basel III include gains/losses due to changes in own credit risk on fair valued liabilities, pension plan assets and other items.
(6) Non-qualifying Tier 1 and Tier 2 capital instruments were subject to a phase-out period of 10 years.
(7) Other Tier 1 capital adjustments under Basel III rules include eligible non-controlling interests in subsidiaries.
(8) Eligible allowances for 2022 and 2021.
(9) This measure has been disclosed in this document in accordance with OSFI Guideline—Leverage Requirements (November 2018).

T27 Changes in regulatory capital

For the fiscal years ($ millions)	Basel III 2022	2021
Total capital, beginning of year	**$ 66,101**	$ 64,512
Changes in Common Equity Tier 1		
Net income attributable to common equity holders of the Bank	**9,656**	9,391
Dividends paid to equity holders of the bank	**(4,858)**	(4,371)
Shares issued	**706**	268
Shares repurchased/redeemed	**(2,873)**	–
Gains/losses due to changes in own credit risk on fair valued liabilities	**(1,593)**	222
ECL transitional adjustment(1)	**(160)**	(1,069)
Movements in accumulated other comprehensive income, excluding cash flow hedges	**2,739**	(2,356)
Change in non-controlling interest in common equity of subsidiaries	**(628)**	(447)
Change in goodwill and other intangible assets (net of related tax liability) (2)	**(390)**	349
Other changes including regulatory adjustments below:	**(528)**	(142)
– Deferred tax assets that rely on future profitability (excluding those arising from temporary differences)	**86**	52
– Significant investments in the common equity of other financial institutions (amount above 10% threshold)	**–**	–
– Other capital deductions	**(360)**	(220)
– Other	**(254)**	26
Changes in Common Equity Tier 1	**$ 2,071**	$ 1,845
Changes in Additional Tier 1 Capital		
Issued	**2,523**	2,003
Redeemed	**(500)**	(1,259)
Other changes including regulatory adjustments and phase-out of non-qualifying instruments	**(747)**	(36)
Changes in Additional Tier 1 Capital	**$ 1,276**	$ 708
Changes in Tier 2 Capital		
Issued	**3,356**	–
Redeemed	**(1,250)**	(750)
Allowance for credit losses eligible for inclusion in Tier 2 and Excess Allowance under AIRB (3)	**(237)**	459
Other changes including regulatory adjustments and phase-out of non-qualifying instruments	**(607)**	(673)
Changes in Tier 2 Capital	**$ 1,262**	$ (964)
Total capital generated (used)	**$ 4,609**	$ 1,589
Total capital, end of year	**$ 70,710**	$ 66,101

(1) The ECL transitional adjustment was introduced by OSFI in Q2, 2020.
(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) Eligible allowances for 2022 and 2021.

Regulatory capital components

The Bank's regulatory capital is divided into three components – CET1, Additional 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, regulatory derived non-controlling interest capital, and prescribed regulatory adjustments or deductions. These regulatory deductions include goodwill, intangible assets (net of deferred tax liabilities), deferred tax assets that rely on future profitability, defined-benefit pension assets, shortfall (if any) of the allowance for credit losses to regulatory parameter-based 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, and qualifying other equity instruments (as described in Note 24). Tier 2 capital consists mainly of qualifying subordinated debentures and any eligible allowances for credit losses.

The Bank's CET1 capital was $53.1 billion as at October 31, 2022, an increase of $2.1 billion from the prior year due primarily to:

- $4.8 billion growth from internal capital generation, net of dividends paid;
- $1.3 billion increase from movements in Accumulated Other Comprehensive Income, excluding cash flow hedges and own credit risk, primarily from the impact of foreign currency translation net of changes in the fair values of investment securities; and,
- $706 million from share issuances mainly from the Bank's increased ownership in Scotiabank Chile;

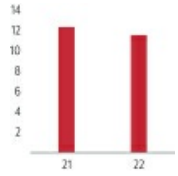
Partly offset by:

- $2.9 billion from share buybacks, under the Bank's Normal Course Issuer Bid;
- $1.1 billion from higher regulatory capital deductions, including goodwill, intangibles, etc.
- $628 million of lower non-controlling interest regulatory capital, mainly from the Bank's increased ownership in Scotiabank Chile; and,
- $160 million from the reduction in OSFI's transitional adjustment for the partial inclusion of increases in Stage 1 and Stage 2 expected credit losses.

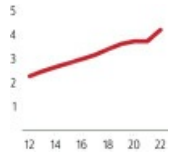
The Bank's Tier 1 capital increased by $3.3 billion, primarily due to the above noted impacts to CET1 capital, and issuances of $1.5 billion and USD $750 million of Limited Recourse Capital Notes (LRCNs), partly offset by the phase-out impact of approximately $650 million of non-qualifying additional tier 1 instruments, the Bank's redemption of $500 million of NVCC preferred shares and other Tier 1 regulatory adjustments.

Total capital increased by $4.6 billion, mainly due to the above noted impacts to CET1 and Tier 1 capital, and issuances of $1.75 billion and USD $1.25 billion of NVCC subordinated debentures, partly offset by the redemption of $1.25 billion of NVCC subordinated debentures, amortization of approximately $325 million of NVCC Tier 2 instruments, the phase-out impact of approximately $250 million of non-qualifying subordinated debentures, lower eligible allowances included in Tier 2 capital and other regulatory adjustments.

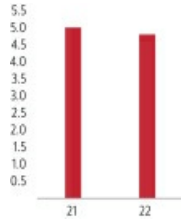
C25 CET1 capital %, as at October 31



C26 Dividend growth dollars per share



C27 Internally generated capital $ billions, for years ended October 31



Dividends

The annual dividend in 2022 was $4.06, an increase of $0.46 from 2021. The Board of Directors approved a quarterly dividend of $1.03 per common share, at its meeting on November 28, 2022. This quarterly dividend applies to shareholders of record at the close of business on January 4, 2023, and is payable January 27, 2023.

T28 Selected capital management activity

For the fiscal years ($ millions)	2022	2021
Dividends		
Common	**$4,858**	$4,371
Preferred and other equity instruments	**260**	233
Common shares issued[1]	**706**	268
Common shares repurchased for cancellation under the Normal Course Issuer Bid[2]	**2,873**	–
Preferred shares and other equity instruments issued[3]	**2,523**	2,003
Preferred shares and other equity instruments redeemed[4]	**500**	1,259
Maturity, redemption and repurchase of subordinated debentures	**1,276**	750

(1) Represents primarily cash received for stock options exercised during the year, common shares issued in connection with the Bank's increased ownership in Scotiabank Chile, 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).
(3) Represents the issuances of $1.50 billion 7.023% fixed rate resetting Limited Recourse Capital Notes (LRCN) Series 3 on June 16, 2022 and US$750 million 8.625% fixed rate resetting Limited Recourse Capital Notes (LRCN) Series 4 on October 25, 2022.
(4) Represents the redemptions of Preferred Shares Series 38 on January 27, 2022.

Normal Course Issuer Bid

On November 30, 2021, the Bank announced that OSFI and the Toronto Stock Exchange (TSX) approved its normal course issuer bid (the "2022 NCIB") pursuant to which it may repurchase for cancellation up to 24 million of the Bank's common shares.

On March 28, 2022, the Bank announced that OSFI and the TSX approved an amendment to the 2022 NCIB (the "2022 NCIB Amendment") to increase the number of common shares that the Bank may repurchase for cancellation from 24 million to 36 million. Purchases under the 2022 NCIB commenced on December 2, 2021, and will terminate upon earlier of: (i) the Bank purchasing the maximum number of common shares under the 2022 NCIB Amendment, (ii) the Bank providing a notice of termination, or (iii) December 1, 2022.

During the year ended October 31, 2022, the Bank repurchased and cancelled approximately 32.9 million common shares at a volume weighted average price of $87.28 per share for a total amount of $2,873 million. No repurchases of common shares were made during the year ended October 31, 2021.

Share data and other capital instruments

The Bank's common and preferred share data, as well as certain other capital instruments, are shown in T29. Further details, including exchangeability features, are discussed in Note 21 and Note 24 of the consolidated financial statements.

T29 Shares and other instruments

As at October 31, 2022	Amount ($ millions)	Dividends declared per share[1]	Number outstanding (000s)	Conversion features
Common shares[2]	$ 18,707	$ 4.06	1,191,375	n/a
NVCC Preferred Shares[3]				
Preferred shares Series 38[4]	–	0.303125	–	–
Preferred shares Series 40[5][6]	300	1.212500	12,000	Series 41

NVCC Additional Tier 1 Securities[3][8]	Amount ($ millions)	Distribution[7]	Yield (%)	Number outstanding (000s)
Subordinated Additional Tier 1 Capital Notes[9]	US$ 1,250	US$ 16.7827	6.56714	1,250
Subordinated Additional Tier 1 Capital Notes[10]	US$ 1,250	US$ 12.25	4.900	1,250
Limited Recourse Capital Notes Series 1[11]	$ 1,250	$ 9.25	3.700	1,250
Limited Recourse Capital Notes Series 2[12]	US$ 600	US$ 9.0625	3.625	600
Limited Recourse Capital Notes Series 3[13]	$ 1,500	$ 17.5575	7.023	1,500
Limited Recourse Capital Notes Series 4[14]	US$ 750	US$ 22.0417	8.625	750

NVCC Subordinated Debentures[3]	Amount ($ millions)	Interest Rate (%)
Subordinated debentures due March 2027[15]	$ –	2.58
Subordinated debentures due December 2025	US$ 1,250	4.50
Subordinated debentures due January 2029	1,750	3.89
Subordinated debentures due July 2029	1,500	2.84
Subordinated debentures due May 2032	1,750	3.934
Subordinated debentures due May 2037	US$ 1,250	4.588

Other	Amount ($ millions)	Distribution[7]	Yield (%)	Number outstanding (000s)
Scotiabank Trust Securities – Series 2006-1 issued by Scotiabank Capital Trust[16a,b]	$ 750	28.25	5.650	750

Options	Number outstanding (000s)
Outstanding options granted under the Stock Option Plans to purchase common shares[2]	9,907

(1) Dividends declared from November 1, 2021 to October 31, 2022.
(2) Dividends on common shares are paid quarterly, if and when declared. As at November 18, 2022, the number of outstanding common shares and options was 1,191,396 thousand and 9,885 thousand, respectively.
(3) These securities contain Non-Viability Contingent Capital (NVCC) provisions necessary to qualify as regulatory capital under Basel III. Refer to Notes 21 and 24 of the consolidated financial statements in the Bank's 2022 Annual Report for further details.
(4) On January 27, 2022, the Bank redeemed all outstanding Non-cumulative Preferred Shares Series 38 at a price equal to $25.00 per share plus dividends declared on November 30, 2021 of $0.303125 per Series 38 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 2022 Annual Report for further details.
(6) 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.
(7) Distributions per face amount of $1,000 or US$1,000 semi-annually or quarterly, as applicable.
(8) Quarterly distributions are recorded in each fiscal quarter if and when paid.
(9) Commencing October 12, 2022, quarterly distributions reset at a rate per annum equal to LIBOR plus 2.648% and will be recorded in each fiscal quarter if and when paid.
(10) Subsequent to the initial five-year fixed rate period ending on June 4, 2025, and resetting every five years thereafter, the distributions, if and when paid, will be determined by the sum of the five-year US Treasury rate plus 4.551%.
(11) Subsequent to the initial five-year fixed rate period ending on July 27, 2026, and resetting every five years thereafter, the distributions will be determined by the sum of the five-year Government of Canada Yield plus 2.761%.
(12) Subsequent to the initial five-year fixed rate period ending on October 27, 2026, and resetting every five years thereafter, the distributions will be determined by the sum of the five-year US Treasury rate plus 2.613%.
(13) On June 16, 2022, the Bank issued $1,500 million 7.023% Fixed Rate Resetting Limited Recourse Capital Notes Series 3 (NVCC)("LRCN Series 3"). In connection with the issuance of LRCN Series 3, the Bank issued $1,500 million of Fixed Rate Resetting Perpetual Subordinated Additional Tier1 Capital Notes (NVCC)("the Series 3 AT1 Notes") to Scotiabank LRCN Trust to be held as trust assets in connection with the LRCN structure. Subsequent to the initial five-year fixed rate period ending on July 27, 2027 and resetting every five years thereafter, the distributions will be determined by the sum of the five-year Government of Canada Yield plus 3.95%. For more details, refer to Note 24.
(14) On October 25, 2022, the Bank issued US$750 million 8.625% Fixed Rate Resetting Limited Recourse Capital Notes Series 4 (NVCC)("LRCN Series 4"). In connection with the issuance of LRCN Series 4, the Bank issued US$750 million of Fixed Rate Resetting Perpetual Subordinated Additional Tier1 Capital Notes (NVCC)("the Series 4 AT1 Notes") to Scotiabank LRCN Trust to be held as trust assets in connection with the LRCN structure. On January 27, 2023, a distribution of US$ 22.0417 per face amount of LRCN Series 4 US $1,000.00 will be payable in respect of a long first period from, and including, October 25, 2022 to, but excluding, January 27, 2023. Thereafter, distributions of US $21.5625 per face US $1,000.00 will be payable quarterly until October 27, 2027. Subsequent to the initial five-year fixed rate period ending on October 27, 2027, and resetting every five years thereafter, the distributions will be determined by the sum of the five-year US Treasury rate plus 4.389%. For more details, refer to Note 24.
(15) On March 30, 2022, the Bank redeemed all outstanding $1.250 million 2.58% Subordinated Debentures (NVCC) due March 30, 2027, at 100% of their principal amount plus accrued interest.
(16)(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(c) – Restrictions on payment of dividends and retirement of shares. The Scotia BaTS II Series 2006-1 may be automatically exchanged, without the consent of the holder, into Non-cumulative Preferred Shares Series T 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. 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.
(16)(b) No cash distributions will be payable on the Scotia BaTS II Series 2006-1 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 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(c) – Restrictions on payment of dividends and retirement of shares.

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 and its deposits and legacy senior debt are rated AA by DBRS Morningstar, Aa2 by Moody's, A+ by Standard and Poor's (S&P), and AA by Fitch as of October 31, 2022. All rating agencies have a Stable outlook on the Bank. The Bank's bail-inable senior debt is rated AA (low) by DBRS Morningstar, A2 by Moody's, AA- by Fitch and A- by S&P.

Credit ratings are not recommendations to purchase, sell or hold a security and are subject to revision or withdrawal at any time by the rating agency.

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.

As at year end, the Bank's RWA of $462.4 billion, represents an increase of approximately $46.3 billion, or 11%, from 2021, due primarily to strong organic growth in RWA from across the Bank's business lines and the impact from foreign currency translation of a weaker Canadian dollar, partially offset by improvements in book quality and model updates.

Credit risk-weighted assets

Credit risk-weighted assets increased by $42.7 billion to $401.4 billion. The key drivers or components of the change are reflected in Table T30, below.

T30 Flow statement for Basel III credit risk-weighted assets ($ millions)

	2022		2021	
Credit risk-weighted assets movement by key driver ($ millions)	**Credit risk**	**Of which counterparty credit risk**	Credit risk	Of which counterparty credit risk
Credit risk-weighted assets as at beginning of year	**$ 358,782**	**$ 18,046**	$ 362,004	$ 18,981
Book size (1)	**49,412**	**321**	22,859	(1,850)
Book quality (2)	**(13,393)**	**(779)**	(10,586)	(743)
Model updates (3)	**(4,336)**	**967**	569	(983)
Methodology and policy (4)	**(1,601)**	**–**	2,315	3,770
Acquisitions and disposals	**(1,498)**	**(23)**	(418)	–
Foreign exchange movements	**14,242**	**1,685**	(17,372)	(1,129)
Other	**(174)**	**–**	(589)	–
Credit risk-weighted assets as at end of year	**$ 401,434**	**$ 20,217**	$ 358,782	$ 18,046

(1) Book size is defined as organic changes in book size and composition (including new business and maturing loans).
(2) 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.
(3) Model updates are defined as model implementation, change in model scope or any change to address model enhancement.
(4) Methodology and policy is defined as methodology changes to the calculations driven by regulatory policy changes, such as new regulation (e.g. Basel III).

T31 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% – 0.0551%
AA to A+	Aa2 to A1	AA to A (high)	Investment	95	0.0551% – 0.0651%
A to A-	A2 to A3	A to A (low)	grade	90	0.0651% – 0.0748%
BBB+	Baa1	BBB (high)		87	0.0748% – 0.1028%
BBB	Baa2	BBB		85	0.1028% – 0.1552%
BBB-	Baa3	BBB (low)		83	0.1552% – 0.2151%
BB+	Ba1	BB (high)		80	0.2151% – 0.2983%
BB	Ba2	BB	Non-Investment	77	0.2983% – 0.5617%
BB-	Ba3	BB (low)	grade	75	0.5617% – 1.1570%
B+	B1	B (high)		73	1.1570% – 1.9519%
B to B-	B2 to B3	B to B (low)		70	1.9519% – 4.7225%
CCC+	Caa1	–		65	4.7225% – 12.1859%
CCC	Caa2	–	Watch list	60	12.1859% – 23.8197%
CCC- to CC	Caa3 to Ca	–		40	23.8197% – 42.1638%
–	–	–		30	42.1638% – 100.0000%
Default			Default	21	100%

(1) Applies to non-retail portfolio.
(2) PD Ranges as at October 31, 2022. The Range does not include the upper boundary for the row.

T32 Non-retail AIRB portfolio exposure by internal rating grade (1)

As at October 31 ($ millions)		2022					2021				
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	124,743	518	–	12	–	106,517	501	–	9	–
	95	65,476	7,375	0.06	30	11	58,652	5,703	0.05	30	10
	90	74,135	12,333	0.07	37	17	72,172	9,898	0.07	36	14
	87	85,132	17,978	0.08	40	21	64,562	14,851	0.09	40	23
	85	73,039	22,940	0.13	44	31	52,838	17,462	0.15	45	33
	83	78,869	30,225	0.18	45	38	56,540	25,822	0.24	46	46
Non-Investment grade	80	52,666	22,474	0.25	42	43	47,700	22,337	0.31	42	47
	77	36,288	17,976	0.35	43	50	33,774	18,315	0.45	42	54
	75	25,712	17,927	0.90	41	70	22,822	13,659	0.69	40	60
	73	7,848	5,555	1.49	34	71	8,449	5,968	1.33	35	71
	70	2,592	2,547	2.56	41	98	2,814	2,348	2.56	36	83
Watch list	65	395	525	8.73	39	133	1,302	1,819	9.38	37	140
	60	788	412	17.02	12	52	1,625	2,343	17.87	29	144
	40	881	2,510	33.32	55	285	696	1,922	27.74	51	276
	30	54	105	53.06	44	194	92	152	56.61	44	165
Default(9)	21	1,220	3,208	100.00	42	263	1,228	2,535	100.00	42	206
Total		629,838	164,608	0.44	34	26	531,783	145,635	0.54	33	27
Government guaranteed residential mortgages		71,867	–	–	22	–	73,044	–	–	21	–
Total		701,705	164,608	0.39	33	23	604,827	145,635	0.47	32	24

(1) Excludes securitization exposures.
(2) Excludes government guaranteed residential mortgages of $71.9 billion ($73.0 billion in 2021).
(3) After credit risk mitigation.
(4) RWA prior to 6% scaling factor.
(5) PD – Probability of Default.
(6) LGD – Loss Given Default.
(7) RW – Risk Weight.
(8) Exposure at default used as basis for estimated weightings.
(9) Gross defaulted 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) rating, will default within a one-year time horizon. IG ratings are a component of the Bank's risk rating system. Each of the Bank's internal borrower IG ratings 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. LGD segments are determined based on facility characteristics such as seniority, collateral type, collateral coverage and other structural elements. Each LGD segment is assigned a LGD estimate. LGD 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 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 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 andlow-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 the Basel framework. The credit quality distribution of the Bank's AIRB non-retail portfolio is shown in Table T32. Year-over-year, the lower overall portfolio average PD is primarily due to a decrease in the proportion of defaulted exposures with a PD of 100%, changes in customer ratings and parameter recalibrations. Portfolio average LGD and RW were generally unchanged year-over-year.

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, 2022, are shown in Table T33. During this period the actual experiences of PD and CCF were lower than the estimates as reflected within the risk parameters. For LGD, actual results are a reflection of the accounts that defaulted during the observation while the estimated LGD is an overall portfolio average LGD parameter for all accounts and of all risk profiles.

T33 Portfolio-level comparison of estimated and actual non-retail percentages

	Estimated(1)	Actual
Average PD	0.57	0.16
Average LGD	39.47	43.86
Average CCF(2)	48.98	24.40

(1) Estimated parameters are based on portfolio count-weighted averages at Q3/21, whereas actual parameters are based on count-weighted 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 in Canada. The retail portfolio is comprised of the following Basel-based pools:

- Residential real estate secured exposures consist 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 consist 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, 2022.

Year-over-year the Bank's AIRB retail portfolio parameters and average risk weights remained stable.

T34 Retail AIRB portfolio exposure by PD range(1)

As at October 31 ($ millions)		2022					2021				
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%	**102,039**	**2,188**	**0.04**	**25**	**2**	91,426	1,973	0.04	25	2
Very low	0.0500% – 0.1999%	**118,374**	**9,134**	**0.17**	**27**	**8**	106,994	7,824	0.17	27	7
Low	0.2000% – 0.9999%	**84,843**	**23,009**	**0.63**	**40**	**27**	77,215	20,487	0.67	39	27
Medium low	1.0000% – 2.9999%	**22,248**	**12,502**	**1.75**	**54**	**56**	20,744	10,861	1.75	50	52
Medium	3.0000% – 9.9999%	**8,654**	**8,657**	**5.11**	**71**	**100**	7,316	7,382	5.26	71	101
High	10.0000% – 19.9999%	**1,123**	**1,461**	**15.66**	**53**	**130**	917	1,186	15.49	53	129
Extremely high	20.0000% – 99.9999%	**1,163**	**1,945**	**37.53**	**56**	**167**	863	1,446	37.02	56	168
Default(7)	100%	**469**	**2,124**	**100.00**	**72**	**453**	430	1,882	100.00	71	438
Total		**338,913**	**61,020**	**0.79**	**33**	**18**	305,905	53,041	0.78	32	17

(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, 2022 is shown in Table T35. During this period the actual experience was materially more favourable to, or in-line with, the estimates as reflected by the risk parameters. For LGD, most retail product actual LGDs were more favourable than their estimates as reflected by the risk parameters, however, for uninsured mortgages actual LGDs reflect the most recent 2 years of recoveries activities against only those accounts that defaulted prior to the observation period while estimated LGDs reflect long run overall portfolio averages applied to all accounts and risk profiles.

T35 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)	0.44	0.30	–	–	–	–
Uninsured mortgages	0.34	0.17	16.86	21.31	–	–
Secured lines of credit	0.20	0.10	27.32	19.86	47	42
Qualifying revolving retail exposures	1.53	0.88	83.98	74.97	391	342
Other retail	1.49	0.80	62.75	58.00	8	8

(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; and,
- Other retail, consisting of term loans, credit cards and lines of credit.

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 and Incremental Risk Charge models for the determination of market risk capital. The attributes and parameters of these models are described in the Risk Measurement Summary. In addition, 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, 2022 and 2021:

T36 Total market risk capital(1)

($ millions)	2022	2021
All-Bank VaR	**$ 131**	$ 93
All-Bank stressed VaR	**324**	353
Incremental risk charge	**345**	150
Standardized approach	**66**	53
Total market risk capital	**$ 866**	$ 649

(1) Equates to $10,820 million of market risk-weighted assets (2021 – $8,112 million).

T37 Risk-weighted assets movement by key drivers

	Market risk	
($ millions)	2022	2021
RWA as at beginning of the year	**$ 8,112**	$ 7,327
Movement in risk levels (1)	**2,452**	(1,803)
Model updates(2)	**195**	(538)
Methodology and policy(3)	**61**	3,134
Acquisitions and divestitures	**–**	(8)
RWA as at end of the year	**$ 10,820**	$ 8,112

(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 (e.g. Basel III).

Market risk-weighted assets increased by $2.7 billion to $10.8 billion, as shown in the table above, due primarily to movements in risk levels in the Bank's Incremental Risk Charge.

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.

Consistent with OSFI's requirements, the Bank applies the Standardized Approach for calculating operational risk capital as per the applicable Basel standards.

Under the Standardized Approach, 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, as defined by OSFI Guideline – Capital Adequacy Requirements (November 2018).

Operational risk-weighted assets increased by $1.0 billion during the year to $50.2 billion primarily due to the growth in the Bank's 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 calculated based on an approach consistent with the Bank's regulatory capital requirements including a conservative forward-looking view of gross income.
- 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.

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. Noteholders of securitizations may also be exposed to these risks. The Bank may earn 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, 2022, total assets of consolidated structured entities were $75 billion, compared to $87 billion at the end of 2021. The decrease in total assets was due primarily to principal receipts on mortgages in the Scotiabank Covered Bond Guarantor Limited Partnership, offset by the purchase of recourse assets by Scotiabank LRCN Trust in connection with the Bank's issuance of limited recourse capital notes. 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 $39 million in 2022 (October 31, 2021 – $38 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 $36 million in 2022, compared to $36 million in 2021. 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 $6.4 billion as at October 31, 2022 (October 31, 2021 – $4.9 billion). The year-over-year increase was due to normal business operations. As at October 31, 2022, total commercial paper outstanding for the Canadian-based conduits was $3.8 billion (October 31, 2021 – $3.5 billion) and the Bank held 0.9% (October 31, 2021 – 0.2%) of the total commercial paper issued by these conduits. Table T38 presents a summary of assets purchased and held by the Bank's two Canadian multi-seller conduits as at October 31, 2022 and 2021, 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; and assets held in these conduits were investment grade as at October 31, 2022.

T38 Assets held by Bank-sponsored Canadian-based multi-seller conduits

	2022			2021		
As at October 31 ($ millions)	**Funded assets(1)**	**Unfunded commitments**	**Total exposure(2)**	Funded assets(1)	Unfunded commitments	Total exposure(2)
Auto loans/leases	**$ 2,019**	**$ 369**	**$ 2,388**	$ 2,541	$ 474	$ 3,015
Trade receivables	**–**	**528**	**528**	130	647	777
Canadian residential mortgages	**929**	**1,621**	**2,550**	250	260	510
Equipment rental contracts	**722**	**34**	**756**	560	11	571
Other	**103**	**35**	**138**	38	31	69
Total(3)	**$ 3,773**	**$ 2,587**	**$ 6,360**	$ 3,519	$ 1,423	$ 4,942

(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 $1,591 million as at October 31, 2022 (October 31, 2021 – $1,765 million). The year-over-year decrease was due to normal business operations.

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, 2022, the Bank earned $2,486 million income from its involvement with the unconsolidated Bank-sponsored structured entities, all of which is from Bank-sponsored mutual funds (for the year ended October 31, 2021 – $2,604 million).

Securitizations

The Bank securitizes its retail loans, as described further below, as an efficient source of financing its operations.

The Bank securitizes fully insured residential mortgage loans, originated by the Bank and third parties, through the creation of mortgage-backed securities that are sold to Canada Housing Trust (CHT), Canada Mortgage and Housing Corporation (CMHC) or third-party investors. The sale of such mortgages does not meet the derecognition requirements where the Bank retains substantially all of the risks and rewards of ownership of the securitized mortgages. The transferred mortgages continue to be recognized on the Consolidated Statement of Financial Position, along with the proceeds from sale treated as secured borrowings. More details have been provided in Note 14 of the consolidated financial statements.

Third-party originated mortgages purchased by the Bank and social housing mortgage pools originated by the Bank qualify for derecognition where the Bank transfers substantially all of the risks and rewards of ownership to third parties. As at October 31, 2022, the outstanding amount of off-balance sheet securitized third-party originated mortgages was $14,137 million (October 31, 2021 – $10,289 million) and off-balance sheet securitized social housing pools was $646 million (October 31, 2021 – $804 million).

The Bank securitizes a portion of its Canadian personal and small business credit card receivables (receivables) through Trillium Credit Card Trust II (Trillium), a Bank-sponsored structured entity. Trillium issues senior and subordinated notes to investors. The proceeds of such issuances are used to purchase co-ownership interests in the 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 noteholders is limited to the purchased co-ownership interests. During the year, no receivables were securitized through Trillium (2021 – $1,075 million).

The Bank securitizes a portion of its Canadian auto loan receivables (receivables) through Securitized Term Auto Receivables Trust (START entity) 2019-CRT, a Bank-sponsored structured entity. The START entity issues senior and subordinated notes to the Bank and/or third-party investors, 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 current and prior year, no receivables were securitized through the START entity. As at October 31, 2022, the outstanding senior and subordinated notes issued by the START entity and held by the Bank of $199 million (2021 – $499 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, 2022, these amounted to $42 billion, compared to $37 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, 2022, these commitments amounted to $268 billion, compared to $240 billion last year. The year-over-year increase is primarily due to an increase in business activity and impact from foreign currency translation.

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 non-interest income in the Consolidated Statement of Income, were $664 million in 2022, compared to $643 million in the prior year. Detailed information on guarantees and loan commitments is disclosed in Note 34 in the consolidated financial statements.

Canadian Government Economic Response Plans

The Bank participated in the following plans as part of the Government of Canada's COVID-19 Economic Response Plan.

Canada Emergency Business Account (CEBA)

Through the CEBA program, the Bank facilitated loans with eligible small business customers and Export Development Canada (EDC). Eligible small business customers received a loan of up to $60,000. The CEBA loans are derecognized from the Bank's Consolidated Statement of Financial Position as the program meets the pass-through criteria for derecognition of financial assets under IFRS 9. As at October 31, 2022, loans issued under the CEBA were approximately $3.9 billion (October 31, 2021 – $4.3 billion).

Business Credit Availability Program (BCAP)

The BCAP provides additional liquidity support to small business and commercial customers through EDC and Business Development Bank of Canada (BDC). As at October 31, 2022, loans issued under the BCAP were $163 million (October 31, 2021 – $160 million).

Under the EDC plan, EDC guarantees an 80% portion of new operating loans made to the export sector as well as domestic companies. Loans guaranteed by EDC continue to be recognized on the Bank's Consolidated Statement of Financial Position.

Under the BCAP, BDC entered into a co-lending facility with the Bank in which BDC purchases an 80% participation in term loans made to eligible small business and commercial customers. The portion of loans sold to BDC are derecognized from the Bank's Consolidated Statement of Financial Position as the program meets the derecognition criteria for a transfer under IFRS 9.

Under the BDC HASCAP, BDC guarantees 100% of new term loans made to eligible small business and commercial customers. Loans guaranteed by BDC continue to be recognized on the Bank's Consolidated Statement of Financial Position. As at October 31, 2022, loans issued under the HASCAP were $277 million (October 31, 2021 – $200 million).

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
- financial instruments designated as net investment hedges.

Gains and losses on derecognition of debt instruments at FVOCI 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 35 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 T50 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% (2021 – 18%) 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 unfavourable when compared to their carrying value by $3.5 billion as at October 31, 2022 (October 31, 2021 – favourable $3.9 billion). This difference relates mainly to loan assets, debt investment securities measured at amortized cost, 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, 2022, 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 – Publicly Known Risk Items

Mortgage-backed securities

Total mortgage-backed securities held in the Non-trading and Trading portfolios are shown in Table T39.

T39 Mortgage-backed securities

As at October 31 Carrying value ($ millions)	2022 **Non-trading portfolio(1)**	2022 **Trading portfolio**	2021 Non-trading portfolio(1)	2021 Trading portfolio
Canadian NHA mortgage-backed securities (2)	**$ 5,410**	**$ 2,149**	$ 7,006	$ 2,022
Canadian residential mortgage-backed securities	**–**	**7**	–	–
U.S. Agency mortgage-backed securities (3)	**11,435**	**–**	6,134	–
Total	**$ 16,845**	**$ 2,156**	$ 13,140	$ 2,022

(1) The balances are comprised of securities under the amortized cost and FVOCI measurement categories.
(2) Canada Mortgage and Housing Corporation is a corporation of the Government of Canada that provides a guarantee of timely payment to NHA mortgage-backed security investors.
(3) The Government National Mortgage Association (Ginnie Mae) is a U.S. Government corporation that provides a guarantee of timely payment to U.S. Agency mortgage-backed security investors.

Other

As at October 31, 2022, 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 and resilience 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 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 in order for it to meet 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. They are designed to identify, assess, and mitigate threats and vulnerabilities to which the Bank is exposed and serve to enhance its overall resilience.



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:

Balancing 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 and managed.

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, Scotiabank Code of Conduct, values and policy principles.

Controls – maintaining a robust and resilient control environment to protect our stakeholders.

Resilience – being prepared operationally and financially to respond to adverse events.

Compensation – performance and compensation structures reinforce the Bank's values and promote sound risk taking behaviour taking into account the compensation-related regulatory environment.

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 several executive and senior risk management committees.

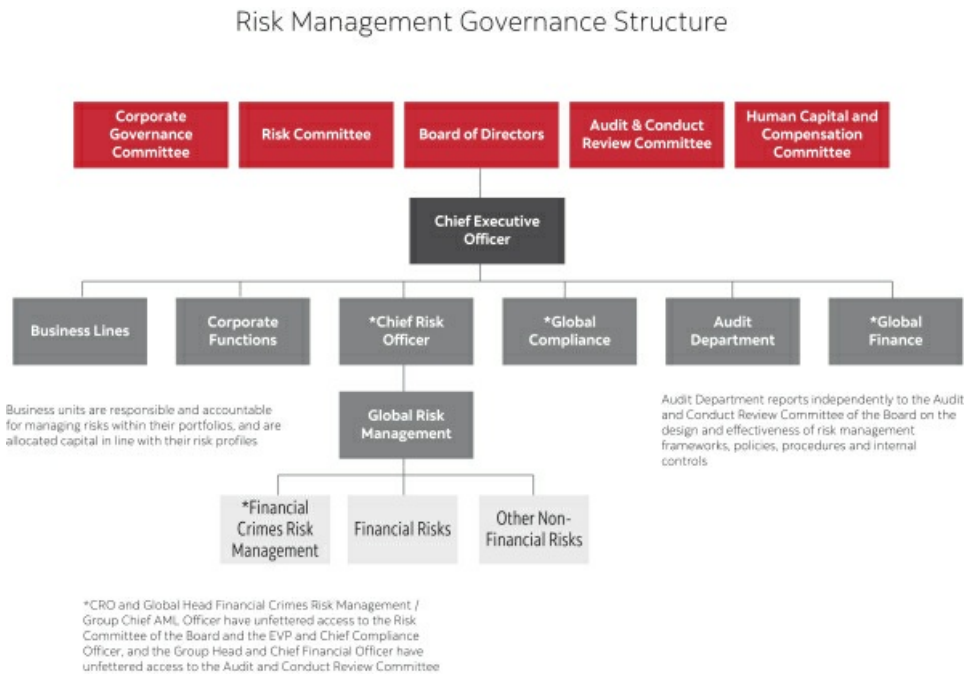
The Bank's risk management framework is predicated on the three lines of defence model. Within this model

- The First Line of Defence (typically comprised of the business lines and most corporate functions)
  - Incurs and owns the risks
  - Designs and executes internal controls
  - Ensures that the risks generated are identified, assessed, managed and monitored, reported on, within risk appetite, and are in compliance with relevant policies, guidelines and limits
- The Second Line of Defence (typically comprised of control functions such as Global Risk Management, Global Compliance and Global Finance)
  - Provides independent oversight and effective challenge of the First Line of Defence
  - Establishes risk appetite, risk limits, policies, and frameworks, in accordance with best practice and regulatory requirements
  - Measures, monitors, controls and reports on risks taken in relation to limits and risk appetite, and on emerging risks
- The Third Line of Defence (Audit Department) provides enterprise-wide independent, objective assurance over the design and operating effectiveness of the Bank's internal control, risk management and governance processes

All employees are, for some of their activities, risk owners, as all employees are capable of generating reputational and operational risks in theirday-to-day activities and are held accountable for owning and managing these risks.

Governance Structure

The Bank's Board of Directors and its Committees provide oversight and governance over the Bank's Risk Management program which is supported by the President and Chief Executive Officer and Chief Risk Officer.



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.

Risk Committee of the Board: assists the Board in fulfilling its responsibilities for the review of the Bank's risk appetite and identifying and monitoring key financial and non-financial risks and the oversight of the promotion and maintenance of a strong risk culture throughout the Bank. The Committee assists the Board by providing oversight of the risk management and anti-money laundering (AML)/anti-terrorism financing (ATF) 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 oversees the Bank's environmental, social, and governance (ESG) risks, including climate change risk. 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 includes oversight of climate-change related disclosure as part of the Bank's financial reporting of ESG matters as well as the external auditor's qualifications, independence and performance. This Committee assists the Board in fulfilling its oversight responsibilities for setting standards of conduct and ethical behaviour, the oversight of conduct reviews, risk culture and conduct risk management and the oversight of compliance with the consumer provisions. The Committee also oversees the Bank's compliance with legal and regulatory requirements, and oversees the Global Finance, Global Compliance and Audit Department functions at the Bank. 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.

Human Capital and Compensation 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 (including conduct risk) 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 in support of the Bank's purpose, culture and strategy, including its ESG strategy.

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 and returns, and meeting the needs of the Bank's other key stakeholders. The CEO oversees the establishment of the Bank's risk appetite, in collaboration with the CRO and CFO, 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 jointly to the CEO and the Risk Committee of the Board and is responsible for the overall management of Global Risk Management which includes Enterprise Risk Governance and Financial Crimes Risk Management (FCRM). The CRO and the EVP of FCRM & Group Chief AML Officer 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 effective challenge and reasonable assurance to executive management, the Board of Directors and shareholders that risks are actively identified, managed and communicated to all key stakeholders. GRM's mission is to ensure that the outcomes of risk taking activities optimize and protect long-term value by using data-driven insight and partnership to drive business impact and safeguards trust.

Global Compliance: is an independent 2nd line of defence that is responsible for managing compliance risk which includes regulatory compliance, conduct, and privacy risks throughout Scotiabank through the Compliance Management Framework (CMF). Global Compliance provides effective challenge and oversight to business lines and corporate functions assessing the adequacy of, adherence to and effectiveness of the Bank's day-to-day regulatory controls, and for opining to the Board on whether, based on the independent monitoring and testing conducted, the controls are sufficiently robust to achieve compliance with the applicable regulatory requirements. The CMF is enabled through effective governance, policies and procedures, a clearly defined risk appetite and embedment of the desired risk culture.

Financial Crimes Risk Management (FCRM): on an enterprise-wide basis, develops AML/ATF and sanctions policies and control standards to be followed in effectively controlling money laundering, terrorist financing, and sanctions risks. The AML Risk group within FCRM is responsible for maintaining the AML/ATF and sanctions 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 standards and requirements. FCRM also provides oversight and effective challenge to the Bank's management of the risk of fraud.

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 all financial reporting related regulatory filings. Global Finance executes the Bank's financial, liquidity and capital management strategies with appropriate governance and control, while ensuring its processes are efficient and effective.

Business Lines and Corporate Functions: as the first line of defence in the Three Lines of Defence model, own the risks generated by their activities, 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 design and implement effective internal controls as well as governance activities to manage risk and maintain activities within risk appetite and policies. Further, business lines have processes to be able to effectively identify, assess, monitor and report against allocated risk appetite limits and are in compliance with relevant policies, standards and guidelines.

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

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 (ERAF) articulates the amount and types of risk the Bank is willing to take to achieve its strategic and financial objectives. The ERAF consists of risk capacity, risk appetite statement, risk appetite metrics, and roles and responsibilities of those overseeing the implementation and monitoring of the ERAF. Together, the application of these components helps to ensure the Bank stays within the 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 compensation programs. The ERAF is reviewed at least annually and is approved by the Bank's Board. Business lines, key subsidiaries, control functions and key business units develop their own risk appetite frameworks and/or risk appetite statements, which are aligned with the Bank's ERAF.



Risk Appetite Statement

The Bank's Risk Appetite Statement articulates the aggregate level and types of risk the Bank is willing to accept, or to avoid, to achieve its business objectives. It includes qualitative statements as well as quantitative measures and considers all the Bank's Principal Risks.

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

- The Bank has no appetite for breaches of the Scotiabank Code of Conduct and consequences applied are commensurate with the severity of the breach. Bank officers and employees are expected to conduct business and interact with others in a legal, compliant, and ethical manner while upholding the Bank's corporate values.
- The Bank favours businesses that generate sustainable, consistent and predictable earnings.
- The Bank limits its risk taking activities to those that are understood and in line with the Bank's risk appetite, risk culture, values and strategic objectives.
- The Bank strives to maintain a robust and resilient control environment to protect its stakeholders and be prepared operationally and financially to respond to adverse events.
- The Bank has no appetite for reputational, legal, or regulatory risk, that would undermine the trust of the Bank's stakeholders.
- The Bank aims to maintain a strong capital and liquidity position and optimally allocate capital to support its strategic and financial objectives.

Risk Appetite Metrics

Risk appetite metrics provide clear risk limits, which are critical in implementing an effective risk management framework. 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, as applicable
- 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 Enterprise 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 individually and/or jointly 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.

Frameworks, Policies and Limits

Frameworks and Policies

The Bank develops and implements its key risk frameworks and policies in consultation with the Board. Such frameworks and policies are also subject to the requirements and guidelines of the Office of the Superintendent of Financial Institutions (OSFI), the Bank Act, the requirements and expectations of other regulators in the jurisdictions and activities in which we conduct business, and in consideration of industry best practices. Frameworks and policies apply to specific types of risk or to the activities that are used to measure and control risk exposure. They are developed in consultation with various stakeholders across risk management and other control and corporate functions, business lines and the Audit Department. Their development and implementation are guided by the Bank's risk appetite, governance standards and set the limits and controls within which the Bank and its subsidiaries can operate. The Bank also provides advice and counsel to its subsidiaries in respect of their risk frameworks and policies to ensure alignment with the Bank, subject to the local regulatory requirements of each subsidiary.

Key risk frameworks and policies may be supported by standards, procedures, guidelines and manuals.

Limits

Limits govern and 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

The Bank's measurement of risk is a key component of its risk management framework. The measurement methodologies may apply to a group of risks or a single risk type and are supported by an assessment of qualitative risk factors to ensure the level of risks are within the Bank's risk appetite. The Bank utilizes various risk techniques such as: models; stress testing; scenario and sensitivity analysis; and back testing using data with forward-looking projections based on plausible and worst case economic and financial market events; to support its risk measurement activities.

Models

The use of quantitative risk methodologies and models is subject to effective oversight and a strong governance framework which includes the application of sound and experienced judgment. The development, design, independent review and testing, and approval of models are subject to the Model Risk Management Policy. The Bank employs models for a number of important risk measurement and management processes including:

- regulatory and internal capital
- internal risk management
- valuation/pricing and financial reporting
- meeting initial margin requirements
- business decision-making for risk management
- stress testing

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 performance resulting from 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 & Scenarios Committee (SSC) or other management committees as appropriate. The SSC is also responsible for reviewing and approving stress test and IFRS 9 related scenarios and models for implementation and use. Each stress testing program is developed with input from a broad base of stakeholders, and results are integrated into management decision making processes for capital adequacy and/or allocation, funding requirements and strategy, risk appetite setting and limit determinations. The stress testing programs are designed to capture a number of stress scenarios with differing severities and time horizons.

Other tests are conducted, as required, at the enterprise-wide level and within specific functional areas to test the decision-making processes of the senior management team and key personnel, by simulating a potential stress scenario. Simulated stress scenarios may include several complexities and disruptions through which senior 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.

Monitoring and Reporting

The Bank continuously monitors its risk exposures to ensure business activities are operating within approved risk appetite limits, thresholds or guidelines. Risk owners are responsible for identifying and reporting breaches of early warning thresholds and risk appetite limits or any other deteriorating trends in risk profile, as well as highlighting evolving external risk factors, to senior management and/or the Board, as appropriate.

Regular ongoing risk reporting to senior management and the Board of Directors aggregates measures of risk for all products and business lines, across the Bank's global footprint, and are used to ensure compliance with risk appetite, policies, limits, and guidelines. They also provide a clear statement on the types, amounts, 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 are presented to the Board of Directors on a quarterly basis.

Risk Identification and Assessment

Effective risk management requires a comprehensive process to identify risks and assess their materiality. We define Risk as the potential impact of deviations from expected outcomes on the Bank's earnings, capital, liquidity, reputation and resilience caused by internal and external vulnerabilities.

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 as risk owners with GRM providing review and effective challenge, as applicable
- Monitoring – risks are identified by constantly monitoring and reporting current trends and analysis, top and emerging risks and internal and external significant adverse events impacting the Bank
- New Products and Services – new or significant change to products, services and/or supporting technology are assessed for potential risks through the New Initiatives Risk Assessment Program
- Strategic Investments – investment transactions are thoroughly reviewed for risks and are approved by the Operating Committee with advice and counsel from the Strategic Transactions and Investment Committee (STIC) who provides direction and guidance on effective allocation and prioritization of resources
- Self Assessments – operational risks through people, processes and systems are periodically self-assessed by the risk owners with the responsible second line of defense providing effective challenge

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 ESG 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.

As part of this annual risk assessment process the Bank's Principal Risks for the year are identified through consultation with various risk owners and/or stakeholders and confirmed by the CRO.

Principal Risk Types

The Bank's Principal Risk types are reviewed annually as part of the Assessment of Risks process to determine that they adequately reflect the Bank's risk profile. Principal Risks are defined as:

Those risks which management considers of primary importance: i) having a significant impact or influence on the Bank's primary business and revenue generating activities (Financial Risks) or ii) inherent in the Bank's business and can have significant negative strategic, business, financial and/or reputational consequences (Non-Financial Risks).

Principal Risks are assessed on an annual basis considering, amongst other things, the following factors:

- Potential impact (direct or indirect) on the Bank's financial results, operations, and strategy
- Effect on the Bank's long-term prospects and ongoing viability
- Regulatory focus and/or social concern

- Short to mid-term macroeconomic and market environment
- Financial and human resources required to manage and monitor the risk
- Establishment of key risk indicators, performance indicators or management limits to monitor and control the risk
- Peer identification and global best practices
- Regular monitoring and reporting to the Board on the risk is warranted

Once a Principal Risk has been identified, governance structures and mechanisms must be in place for that risk:

- Committee governance structures have been established to manage the risk
- Dedicated 2nd line resources are in place providing effective challenge
- Frameworks and supporting policies, procedures and guidelines have been developed and implemented to manage the risk as appropriate
- Risk appetite limits have been established supported by management limits, early warning thresholds and key risk indicators as appropriate for the risk
- Adequate and effective monitoring and reporting has been established to the Board, executive and senior management, including from subsidiaries
- Board and executive management have clear roles and responsibilities in relation to risk identification, assessment, measurement, monitoring and reporting to support effective governance and oversight

Principal Risks are categorized into two main groups:

Financial Risks:

Credit, Liquidity, Market
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 to generate sustainable, consistent and predictable earnings. Financial risks are generally quantifiable and are relatively predictable. The Bank has a higher risk appetite for financial risks which are 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 Risks:

Compliance, Cyber Security & Information Technology (IT), Data, Environmental, Social & Governance (ESG), Model, Money Laundering / Terrorist Financing and Sanctions, Operational, Reputational, Strategic
These are risks that 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, non-financial risks are less predictable and more difficult to define and measure. The Bank has low risk appetite for non-financial risks and mitigates these accordingly.

Significant Adverse Events

The Bank defines a Significant Adverse Event (SAE) as an internally or externally occurring event that has resulted, or may result in, a significant impact on the Bank's financial performance, reputation, risk appetite, regulatory compliance, or operations. Significant is defined as the relative importance of a matter within the context in which it is being considered, including quantitative and qualitative factors, such as magnitude, nature, effect, relevance, and impact.

Risk Culture

Effective risk management requires a strong, robust, and pervasive risk culture where every Bank employee understands and recognizes their role as a risk manager and is responsible for identifying and 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.

A strong risk culture is a key driver of conduct. It promotes behaviours that align to the Bank's values and enables employees to identify risk taking activities that are beyond the established risk appetite.

The Bank's Risk Culture program is based on four indicators of a strong risk culture:

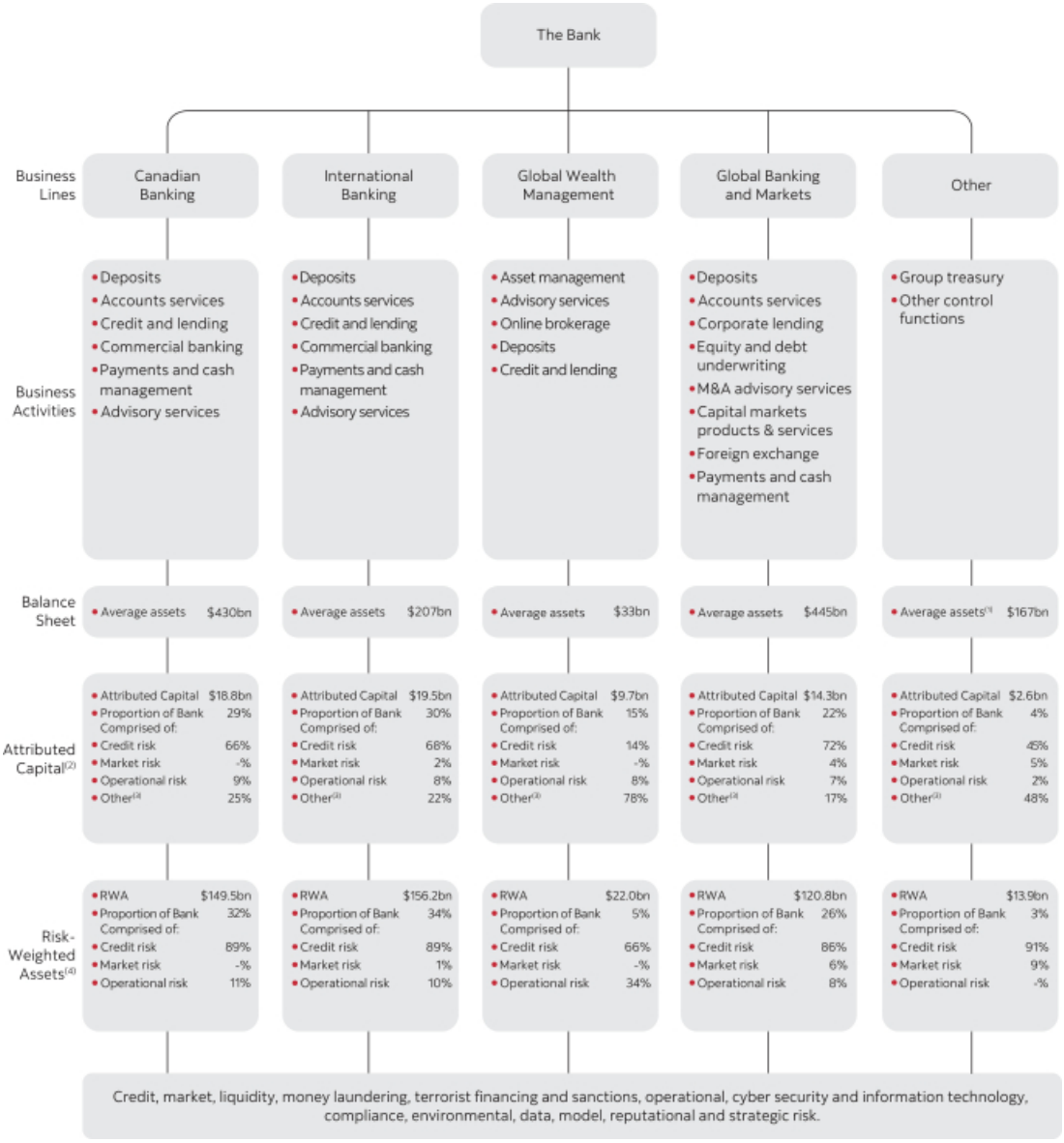


1. Tone from the Top – Leading by example including clear and consistent communication on risk behaviour expectations, the importance of the Bank's values, and fostering an environment where everyone has ownership and responsibility for "doing the right thing".
2. Accountability – All employees are accountable for risk management. There is an environment of open communication where employees feel safe to speak-up and raise concerns without fear of retaliation and consequences for not adhering to the desired behaviours.
3. Risk Management – Risk taking activities are consistent with the Bank's strategies and risk appetite. Risk appetite considerations are embedded in key decision-making processes.
4. People Management – Performance and compensation structures encourage desired behaviours and reinforce the Bank's values and risk culture. Employees are rewarded for 'how' results are achieved in addition to 'what' is achieved.

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

- Scotiabank Code of Conduct (our "Code"): describes standards of conduct required of Employees, Contingent Workers, Directors and officers of the Bank. All Scotiabankers are required to receive, read and comply with our Code, and any other applicable Scotiabank policies and affirm their compliance within the required timeline on an annual basis. This includes an annual Code acknowledgement that they have read and complied with our Code and all applicable Scotiabank policies and procedures; and reported any breaches or suspected breach in accordance with the provisions set out in our Code or policy respectively.
- Values: Respect – Value Every Voice; Integrity – Act with Honour; 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
- Compensation: programs are structured to comply with compensation-related principles and regulations and discourage behaviours that are not aligned with the Bank's values and Scotiabank Code of Conduct, and ensure that such behaviours 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
- Employee goals: all employees across the Bank have a risk goal assigned to them annually
- Executive mandates: all Executives across the Bank have risk management responsibilities within their mandates

T40 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, 2022 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 regularly monitor our operating environment to identify, assess, review and manage a broad range of top and emerging risks proactively, and to undertake appropriate risk mitigation strategies.

Risks are identified using a comprehensive risk identification system whereby information is gathered and consolidated from a variety of internal and external sources including industry research and peer analysis, Senior Management expertise, and risk reporting from our international operations. The results of this research, in conjunction with internal impact assessments across the Bank's principal risks, help identify top and emerging risks, which, along with mitigation strategies, are summarized and reported to Executives and the Board of Directors on a quarterly basis.

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

Environmental, Social and Governance (ESG)

There is an increasing expectation by various stakeholders to address social and environmental challenges (including climate change, human rights, racism, and inequality) and to demonstrate exemplary governance in managing ESG risk. An inability to manage this risk can result in higher cost of capital, funding, regulatory compliance and disclosures. Under current laws, making exaggerated or misleading sustainability claims or "greenwashing" creates legal and reputational risks. Severe weather can damage the Bank's properties and disrupt its own operations and those of its customers, negatively impacting profitability. However, climate change also creates new opportunities to invest in sustainable finance initiatives. For further details please refer to the ESG Risk section on page 107.

To manage ESG risk, and meet increasing stakeholder expectations, the Bank operates its business responsibly, ethically, and remains in compliance with laws and regulations that are reflected in several key policies and commitments.

Environmental policies and commitments remain focused on three goals: to be a leader in driving sustainable finance, advice, and solutions for customers, with the systems and reporting to track the Bank's sustainable finance goals; to drive toward net-zero emissions; and deliver progress toward the Bank's net-zero targets. Social and Governance risks are managed through the implementation of several key policies and commitments, including, but not limited to, the Bank's code of conduct, corporate governance policies, human rights statements (prescribed by the UN Guiding Principles on Human Rights), anti-slavery and human trafficking statements (in accordance with Modern Slavery legislation) and diversity, equity, and inclusion goals (e.g., ScotiaRISE, the Scotiabank Women Initiative, the Black-Led Business Financing Program and STEM apprenticeship opportunities).

Evolving Cyber Security Threats

Cyber Security continues to be among the Bank's top risk concerns, with state-sponsored attackers and sophisticated ransomware gangs being the most significant threat actors. The ongoing geopolitical tensions increase the risk of escalations though retaliatory cyber attacks. Threat actors continue to adapt, and their attacks are increasing in sophistication, severity, and prevalence with the purpose of extortion, fraud, unauthorized access to sensitive data, and disruption of financial operations. The technology environment of the Bank, its customers and third parties' services may be subject to attacks, breaches, or other compromises.

The Bank proactively monitors and manages these risks by investing in technology and talent expertise to ensure appropriate risk-based remediation activities, and in enhanced tooling to support the Bank's ability to improve cyber resiliency and reinforce protection against events and factors outside of its control. In addition, the Bank purchases insurance coverage to help mitigate against certain potential losses associated with cyber incidents.

Geopolitical Tensions

Geopolitical risks may give rise to increased strategic and business risk for the Bank. This includes concerns over the operational and financial impacts of a volatile global environment, such as trade disputes in Asia, sanctions over the Russian conflict, and political changes in Latin America. The escalations of trade disruptions over the past few years are calling into question the vision of a globalized economy with some government officials pushing to implement policies encouraging companies to spread manufacturing within a group of 'like-minded' nations to ensure uninterrupted and diversified access to raw materials, technologies, or products. While such policies seek to mitigate the economic cost associated with geopolitical risk, such measures may paradoxically result in higher cost of capital deployment or more inefficient capital allocation.

The scope and intensity of geopolitical risk events are difficult to predict. The Bank seeks to do business in countries that have a track record of economic growth and institutional stability. The Bank's stress testing programs help evaluate the potential impacts of severe conditions, and the Bank can draw from its long experience operating in emerging markets across the globe to manage volatility, and right scaling exposure when necessary.

Increased Regulatory Risk & Uncertainty

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 its businesses and to implement any necessary changes, unintentional 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, the execution of its business strategy and its reputation.

Regulators have also evidenced an increased focus on risks associated with anti-money laundering and terrorist financing. Sanctions authorities continue to be very active with the number of 'listed' persons increasing. The scope of compliance requirements and the associated cost for the Bank are increasing as well with evolving regulatory expectations such cyber security, data risk, consumer protection and privacy, model risk, third-party risk, and operational resilience. This focus could lead to more regulatory or other enforcement actions.

The Bank continues to monitor changes in regulatory guidance from regulators and continue to assess the impact of new regulations across its operating footprint and the credit life cycle. For additional information on some of the key regulatory developments that have the potential to impact the Bank's operations, see "Regulatory Developments" on page 114.

Inflation and Macroeconomic Uncertainty

Global inflation, exacerbated by supply chain issues and geopolitical uncertainties, are expected to keep central banks aggressive in their attempts to mitigate pricing pressures. With interest rates now in restrictive territory and market sentiment deteriorating, the risk of a global recession is increasing.

Rapidly rising interest rates and consumer prices, combined with wages that are failing to keep pace with the cost of living, may leave many households vulnerable and affect some customers' ability to service debt.

The Bank proactively adjusts lending strategies across all markets and portfolios to reflect changes in the risk profile of its customers, while performing ongoing portfolio stress tests, and continuing to enhance risk management capabilities through investments in technology and analytics. Portfolios are actively monitored for delinquency trends from inflationary pressures, and proactive collections measures are being deployed to mitigate potential impacts to the Bank's most vulnerable borrowers.

Talent Attraction and Retention

Recruiting and retention challenges continue as labour markets remain tight and competitive pressure translates into higher compensation demands. As well, companies face the task of ensuring risk culture and conduct remains robust and consistent in the face of increased employee turnover and new flexible working arrangements. The inability to attract or retain skilled staff can negatively impact business objectives and operational efficiencies.

The Bank continues to execute talent retention and incentive programs to support the hiring of staff and to position Scotiabank as an employer of choice. To compete in the marketplace, the Bank is focused on promoting a hybrid work environment with work location flexibility. The Bank continues to develop a culture of ongoing learning and development to drive employee engagement, and by making further progress to help develop leadership capabilities.

Technological & Business Innovations

Risks and impacts emanating from digitalization of money (e.g., crypto currency and decentralized finance) and consumer directed finance, such as open banking, and continued digital innovations (e.g., adoption of cloud computing and artificial intelligence/machine learning) increases strategic risk and potential vulnerabilities, requiring ongoing investments to adapt to new technologies in a secure manner. New unregulated participants can disrupt a bank's operating model with the use of advanced technologies, agile delivery methodologies and analytical tools offering bank-like products with lower fixed costs. The increasing role of data, models, and artificial intelligence in decision making processes and operations, evolving regulatory expectations, increasing sensitivities and concerns on their appropriate use, and the potential for bias in the decision-making process, can result in reputational risk.

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 continues to invest in its digital capabilities to contribute to financial innovation, while continuing to monitor for evolving risks in new technology tools.

Third-Party Risk

The Bank continues to rely on third parties for the delivery of some critical services. The emergence of a concentrated number of dominant service providers, combined with uncertain geopolitical and macroeconomic climate, increases compliance, operational, data and cyber risk for service providers. Regulatory focus in third party risk management is evolving and includes the financial industry's approach to cloud technology, data protection, and operational resilience.

The Bank continues to enhance third party risk assessment and governance to ensure a solid risk management framework to support engagements with third party service providers. The Bank continues to invest in enhancing its governance of third parties, resourcing capabilities, and technology to ensure it manages third party risk prudently.

Principal Risks – Financial

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.

Credit risk summary

- The Bank's overall loan book as of October 31, 2022 increased to $770 billion versus $663 billion as of October 31, 2021, with growth reflected in Personal, and Business and Government lending. Residential mortgages were $349 billion as of October 31, 2022, with 87% in Canada. The corporate loan book, which accounts for 40% of the total loan book, is composed of 63% of loans with an investment grade rating as of October 31, 2022, compared to 36% of the total loan book in October 31, 2021.
- Loans and acceptances (Personal, and Business and Government lending) remained diversified by region, industry and customer. Regional exposure is spread across our key markets (Canada 67%, United States 9%, Chile 7%, Mexico 5% and Other 12%). Financial Services constitutes 5% of overall gross exposures (before consideration of collateral) and was $39 billion, an increase of $6 billion from October 31, 2021. These exposures are predominately to highly rated counterparties and are generally collateralized.

The effective management of credit risk requires the establishment of an appropriate 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 and thresholds 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:
  - credit risk management policies;
  - delegation of authority;
  - the credit risk management program;
  - credit risk management for trading and investment activities; and
  - Single Name 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 methodology and calculation of the allowance for credit losses; and the authorization of write-offs.

Corporate and commercial credit exposures are segmented by various business lines and/or by major industry type. Aggregate credit risk limits for each of these segments are also reviewed and approved biennially 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 to 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 Bank's credit risk rating systems support the determination of key credit risk parameter estimates (Probability of Default (PD), Loss-Given-Default (LGD) and Exposure at Default (EAD)) that are applicable to both Retail and Business Banking portfolios and are designed to measure customer credit and transaction risk. 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 comprehensive 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 that the results of each process are adequately documented; and
- The validation process represents an effective challenge to the design and development process including an assessment of risk measures.

The Bank's credit risk rating methodologies and parameters are reviewed and validated at least annually. Units within GRM are responsible for design, and development of credit risk rating methodologies and parameters. Separate units within GRM are responsible for validation and review. The operation of these separate units are functionally independent from the business units responsible for originating exposures. Within GRM, these units are also independent from the units involved in risk rating approval and credit adjudication.

Business Banking credit risk ratings and associated risk parameters affect lending decisions, and loan pricing. Both Business Banking and Retail Banking's credit risk rating systems affect the computation of the allowance for credit losses, and regulatory capital.

Corporate and commercial

Corporate and commercial credit exposure arises in the Bank's business lines.

Risk ratings

The Bank's risk rating system utilizes internal grade (IG) ratings – a 17 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 IG ratings and external agency ratings is shown in table T31.

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 a credit exceeds the authority delegated to a credit unit, 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;
- Environmental risks (including regulatory, physical or reputational impacts);
- 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 promptlyre-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. 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 management 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 OTC derivatives (including foreign exchange and commodity based transactions), Securities Financing Transactions (including repurchase/reverse repurchase agreements, and securities lending/borrowing), and on-exchange futures. 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 and regulation in some jurisdictions can require both parties to post initial margin (regulatory and non-regulatory). 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 90% 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, 2022. No individual exposure to an investment grade bilateral counterparty exceeded $1,443 million and no individual exposure to a corporate counterparty exceeded $665 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 and customer segmentation, 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 in line with our risk appetite. 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, a more consistent experience to the customer, 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 at least 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 appraisals (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

IFRS 9 *Financial Instruments* requires the consideration of past events, current conditions and reasonable and supportable forward-looking information over the life of the exposure to measure expected credit losses. Furthermore, to assess significant increases in credit risk, IFRS 9 requires that entities assess changes in the risk of a default occurring over the expected life of a financial instrument when determining staging.

The Bank's models are calibrated to consider past performance and macroeconomic forward-looking variables as inputs in the framework described below. Expert credit judgement may be made in circumstances where, in the Bank's view, the inputs, assumptions, and/or modelling techniques do not capture all relevant risk factors, including the emergence of economic or political events of the market up to the date of the financial statements. Expert credit judgement continues to be applied to the assessment of underlying credit deterioration and migration of balances to progressive stages. Consistent with the requirements of IFRS 9, the Bank has considered both quantitative and qualitative information in the assessment of significant increase in risk.

The Bank has no direct credit exposure to Russia or Ukraine but does have credit exposure to businesses that are impacted either directly or indirectly, by higher energy costs or commodity prices, or potential disruption within their supply chains. The Bank monitors both the internal and external indicators for signs of contagion risk and any second or third order risks that may arise from the war in Ukraine above and beyond those captured in the macroeconomic outlook. Such impacts are not significant and are appropriately mitigated.

The Bank generates a forward-looking base case scenario and three alternate forward-looking scenarios (one optimistic and two pessimistic) as key inputs into the expected credit loss provisioning models. The global economic outlook has deteriorated over the last year owing to the combined impacts of central bank efforts to tame inflation, the consequences of Russia's war on Ukraine, pandemic management in China and the impact of higher energy prices. Concerns about potential slowdown and high inflation have led to very volatile financial markets, which have clouded the outlook further. Therefore, the base case scenario is less favourable this year. Relative to the base case scenario, the optimistic scenario features somewhat stronger economic activity. The two pessimistic scenarios consider the potential risks of stagflation and recession.

In light of current economic uncertainty, the pessimistic scenarios feature a protracted period of high commodity prices, elevated financial market uncertainty and a further disruption to supply chains. All these elements lead to much higher inflation compared to the base case scenario. Central banks respond by increasing rates more aggressively in the pessimistic scenarios, pushing rates across the yield curve higher compared to the base case scenario and resulting in a rapid deceleration of growth. In the pessimistic scenario, stagflation is short-lived, while in the very pessimistic scenario, a recession persists for a longer period of time. The Bank increased the weight of the pessimistic scenarios in calculating the allowance for credit losses on performing loans compared to the prior year, to capture the elevated downside risk to the outlook.

The table below shows a comparison of projections for the next 12 months of select macroeconomic variables used to calculate the modelled estimate for the allowance for credit losses (see page 189 for all key variables). Any further changes in these variables up to the date of the financial statements is incorporated through expert credit judgement:

T41 Select macroeconomic variable projections

	Base Case Scenario		Alternative Scenario - Optimistic		Alternative Scenario - Pessimistic		Alternative Scenario - Very Pessimistic	
Canada								
Real GDP growth, y/y % change	**1.2**	3.4	**2.4**	5.3	**-4.8**	-1.3	**-5.9**	-7.4
Consumer price index, y/y %	**4.9**	3.0	**5.2**	3.4	**9.3**	2.0	**12.5**	1.6
Bank of Canada overnight rate target, average %	**3.8**	0.3	**4.2**	0.9	**5.1**	0.3	**5.1**	0.3
Unemployment rate, average %	**5.7**	6.3	**5.1**	5.6	**9.7**	8.8	**10.2**	11.7
US								
Real GDP growth, y/y % change	**0.6**	5.7	**1.3**	7.3	**-5.1**	2.4	**-6.5**	-1.4
Consumer price index, y/y %	**5.4**	4.0	**5.8**	4.5	**10.0**	3.3	**13.2**	2.6
Target federal funds rate, upper limits, average %	**3.5**	0.3	**4.7**	0.8	**4.8**	0.3	**4.8**	0.3
Unemployment rate, average %	**4.3**	3.8	**4.2**	3.4	**7.9**	5.6	**8.3**	6.8
Global								
WTI oil price, average USD/bbl	**89**	69	**95**	75	**116**	61	**125**	57

The table below shows a quarterly breakdown of the projections for the above macroeconomic variables under the base case scenario:

T42 Quarterly breakdown of macroeconomic variables

	Base Case Scenario									
	Calendar Quarters				Average	Calendar Quarters				Average
Next 12 months	**Q4 2022**	**Q1 2023**	**Q2 2023**	**Q3 2023**	**October 31 2022**	Q4 2021	Q1 2022	Q2 2022	Q3 2022	October 31 2021
Canada										
Real GDP growth, y/y % change	**1.9**	**1.2**	**0.6**	**1.0**	**1.2**	3.1	2.6	3.9	4.1	3.4
Consumer price index, y/y %	**6.9**	**5.1**	**4.0**	**3.6**	**4.9**	3.7	3.0	2.8	2.6	3.0
Bank of Canada overnight rate target, %	**3.8**	**3.8**	**3.8**	**3.8**	**3.8**	0.3	0.3	0.3	0.5	0.3
Unemployment rate, average %	**5.4**	**5.6**	**5.8**	**5.9**	**5.7**	7.0	6.5	6.0	5.7	6.3
US										
Real GDP growth, y/y % change	**0.1**	**0.6**	**1.0**	**0.8**	**0.6**	6.7	6.3	5.5	4.2	5.7
Consumer price index, y/y %	**7.2**	**5.8**	**4.6**	**4.0**	**5.4**	4.8	4.4	3.8	3.0	4.0
Target federal funds rate, upper limit, %	**3.5**	**3.5**	**3.5**	**3.5**	**3.5**	0.3	0.3	0.3	0.3	0.3
Unemployment rate, average %	**3.8**	**4.1**	**4.4**	**4.8**	**4.3**	4.6	4.0	3.5	3.1	3.8
Global										
WTI oil price, average USD/bbl	**90**	**89**	**89**	**88**	**89**	70	69	69	69	69

T43 Allowance for credit losses by business line

As at October 31 ($ millions)	2022	2021
Canadian Banking		
Retail	**$ 1,528**	$ 1,863
Commercial	**328**	380
	$ 1,856	$ 2,243
International Banking		
Retail		
Caribbean and Central America	**$ 547**	$ 524
Mexico	**576**	474
Peru	**631**	538
Chile	**490**	541
Colombia	**247**	319
Other	**84**	81
Commercial	**780**	730
	$ 3,355	$ 3,207
Global Wealth Management	**$ 20**	$ 21
Global Banking and Markets	**$ 115**	$ 155
Other	**$ 2**	$ –
Allowance for credit losses on loans	**$ 5,348**	$ 5,626
Allowance for credit losses on:		
Acceptances	**$ 31**	$ 37
Off-balance sheet exposures	**108**	65
Debt securities and deposits with financial institutions	**12**	3
Total Allowance for credit losses	**$ 5,499**	$ 5,731

Allowance for credit losses

The total allowance for credit losses as at October 31, 2022 was $5,499 million compared to $5,731 million in the prior year. The allowance for credit losses for loans was $5,348 million, a decrease of $278 million from October 31, 2021. The decrease was due primarily to lower provision for performing loans partly offset by the impact of foreign currency translation.

The allowance for credit losses on performing loans was $3,713 million compared to $3,971 million as at October 31, 2021. The decrease was due primarily to improved portfolio credit quality expectations, with offsets related to the less favourable macroeconomic forecast, portfolio growth and the impact of foreign currency translation.

The allowance for credit losses on impaired loans decreased by $20 million to $1,635 million from $1,655 million (refer to T44). The decrease was primarily related to the International Banking retail portfolio driven by lower formations, partially offset by the unfavourable impact of foreign currency translation.

The allowance for credit losses on impaired loans in Canadian Banking decreased by $21 million to $415 million, due primarily to lower retail and commercial loan provisions (refer to T44). In International Banking, the allowance for credit losses on impaired loans increased by $14 million to $1,185 million, due primarily to the impact of foreign currency translation offset by lower formations in the retail portfolio. In Global Banking and Markets, the allowance for credit loss for impaired loans decreased by $11 million to $28 million, due primarily to lower formations partly offset by the impact of foreign currency translation. In Global Wealth Management, the allowance for credit loss for impaired loans decreased by $2 million to $7 million.

T44 Impaired loans by business line

As at October 31 ($ millions)	2022 Gross impaired loans	2022 Allowance for credit losses	2022 Net impaired loans	2021 Gross impaired loans	2021 Allowance for credit losses	2021 Net impaired loans
Canadian Banking						
Retail	**$ 603**	**$ 266**	**$ 337**	$ 614	$ 300	$ 314
Commercial	**314**	**149**	**165**	327	136	191
	$ 917	**$ 415**	**$ 502**	$ 941	$ 436	$ 505
International Banking						
Caribbean and Central America	**$ 718**	**$ 185**	**$ 533**	$ 744	$ 200	$ 544
Latin America						
Mexico	**1,020**	**294**	**726**	758	269	489
Peru	**761**	**352**	**409**	694	347	347
Chile	**740**	**202**	**538**	512	180	332
Colombia	**301**	**67**	**234**	418	88	330
Other Latin America	**155**	**85**	**70**	144	87	57
Total Latin America	**2,977**	**1,000**	**1,977**	2,526	971	1,555
	$ 3,695	**$ 1,185**	**$ 2,510**	$ 3,270	$ 1,171	$ 2,099
Global Wealth Management	**$ 18**	**$ 7**	**$ 11**	$ 26	$ 9	$ 17
Global Banking and Markets						
Canada	**$ 128**	**$ 21**	**$ 107**	$ 134	$ 7	$ 127
U.S.	**–**	**–**	**–**	24	4	20
Asia and Europe	**28**	**7**	**21**	61	28	33
	$ 156	**$ 28**	**$ 128**	$ 219	$ 39	$ 180
Totals	**$ 4,786**	**$ 1,635**	**$ 3,151**	$ 4,456	$ 1,655	$ 2,801

Impaired loan metrics

As at October 31 ($ millions)	Net impaired loans 2022	Net impaired loans 2021
Net impaired loans as a % of loans and acceptances (1)	**0.41%**	0.42%
Allowance against impaired loans as a % of gross impaired loans (1)	**34%**	37%

(1) Refer to Glossary on page 133 for the description of the measure.

Impaired loans

Gross impaired loans increased to $4,786 million as at October 31, 2022, from $4,456 million last year (refer to T69). The increase was due primarily to the impact of foreign currency translation and higher commercial formations in International Banking partly offset by lower formations in International Banking retail portfolio.

Impaired loans in Canadian Banking decreased by $24 million, due primarily to lower formations in the retail and commercial portfolios. In International Banking, impaired loans increased by $425 million, due primarily to the impact of foreign currency translation and higher formations in commercial portfolio partly offset by lower formations in retail portfolio. Impaired loans in Global Banking and Markets decreased by $63 million, due primarily to lower formations, partly offset by the impact of foreign currency translation. Impaired loans in Global Wealth Management decreased by $8 million. The gross impaired loan ratio was 62 basis points as at October 31, 2022, a decrease of five basis points.

Net impaired loans, after deducting the allowance for credit losses, were $3,151 million as at October 31, 2022, an increase of $350 million from the prior year. Net impaired loans as a percentage of loans and acceptances were 0.41% as at October 31, 2022, a decrease of one basis point from 0.42% last year.

Portfolio review

Canadian Banking

Gross impaired loans in the retail portfolio decreased by $11 million or 2% from last year, due primarily to lower formations. The allowance for credit losses on impaired loans in the retail portfolio was $266 million, down $34 million or 11% from last year due to lower formations.

In the commercial loan portfolio, gross impaired loans decreased by $13 million to $314 million due primarily to repayments. The allowance for credit losses on impaired loans was $149 million, up $13 million or 10% from last year, due to new formations.

International Banking

In the retail portfolio, gross impaired loans increased by $86 million to $1,623 million, due primarily to the impact of foreign currency translation partially offset by lower formations. The allowance for credit losses on impaired loans in the retail portfolio was $686 million, a decrease of $11 million or 2% from last year, due primarily to lower formations partly offset impact of foreign currency translation.

In the commercial portfolio, gross impaired loans were $2,072 million, an increase of $339 million from last year, due primarily to higher formations and the impact of foreign currency translation. The allowance for credit losses on impaired loans was $499 million, an increase of $25 million or 5% from last year, due primarily to the impact of foreign currency translation.

Global Wealth Management

Gross impaired loans in Global Wealth Management were $18 million, a decrease of $8 million from last year. The allowance for credit losses on impaired loans was $7 million, a decrease of $2 million from last year.

Global Banking and Markets

Gross impaired loans in Global Banking and Markets decreased by $63 million to $156 million, due primarily to lower formations and repayments, partly offset by the impact of foreign currency translation. The allowance for credit losses on impaired loans was $28 million, decreased by $11 million or 28% from last year, due primarily to lower formations partly offset by the impact of foreign currency translation.

Risk diversification

The Bank's exposure to various countries and types of borrowers are well diversified (see T63 and T67). Chart C28 shows loans and acceptances by geography. Ontario represents the largest Canadian exposure at 36% of the total. Latin America was 18% of the total exposure and the U.S. was 9%.

Chart C29 shows loans and acceptances by type of borrower (see T67). Excluding loans to households, the largest industry exposures were financial services (5% including banks and non-banks), real estate and construction (8%), wholesale and retail (5%), and utilities (4%).

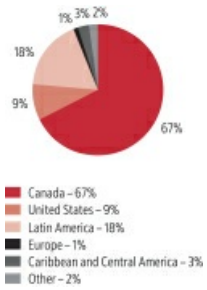
Risk mitigation

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 2022, loan sales totaled $309 million, compared to $124 million in 2021. The largest volume of loan sales in 2022 related to loans in the Energy industry. As at October 31, 2022, no credit derivatives were used to mitigate loan exposures in the portfolios (October 31, 2021 – nil). 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.

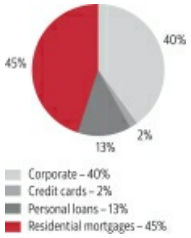
Overview of loan portfolio

The Bank has a well-diversified portfolio by product, business and geography. Details of certain portfolios of current focus are highlighted below.

C28 Well diversified in Canada and internationally... loans and acceptances, October 2022



C29 ... and in household and business lending loans and acceptances, October 2022



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, 2022, these loans accounted for $463 billion or 60% of the Bank's total loans and acceptances outstanding (October 31, 2021 – $424 billion or 64%). Of these, $371 billion or 80% are real estate secured loans (October 31, 2021 – $340 billion or 80%). 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.

T45 Insured and uninsured residential mortgages and HELOCs, by geographic areas (1)

	2022											
	Residential mortgages						Home equity lines of credit					
As at October 31	Insured(2)		Uninsured		Total		Insured(2)		Uninsured		Total	
($ millions)	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Canada:(3)												
Atlantic provinces	$ 5,263	1.7	$ 6,492	2.1	$ 11,755	3.8	$ –	–	$ 1,054	4.8	$ 1,054	4.8
Quebec	8,372	2.8	12,015	4.0	20,387	6.8	–	–	1,093	4.9	1,093	4.9
Ontario	34,661	11.4	132,053	43.7	166,714	55.1	–	–	12,847	58.0	12,847	58.0
Manitoba & Saskatchewan	5,723	1.9	4,714	1.6	10,437	3.5	–	–	649	2.9	649	2.9
Alberta	17,495	5.8	15,456	5.1	32,951	10.9	–	–	2,399	10.8	2,399	10.8
British Columbia & Territories	12,000	4.0	48,242	15.9	60,242	19.9	–	–	4,136	18.6	4,136	18.6
Canada(4)(5)	$83,514	27.6%	$218,972	72.4%	$302,486	100%	$ –	–%	$22,178	100%	$22,178	100%
International	–	–	46,793	100	46,793	100	–	–	–	–	–	–
Total	$83,514	23.9%	$265,765	76.1%	$349,279	100%	$ –	–%	$22,178	100%	$22,178	100%
						2021						
Canada(4)(5)	$86,386	30.8%	$193,783	69.2%	$280,169	100%	$ –	–%	$20,464	100%	$20,464	100%
International	–	–	39,509	100	39,509	100	–	–	–	–	–	–
Total	$86,386	27.0%	$233,292	73.0%	$319,678	100%	$ –	–%	$20,464	100%	$20,464	100%

(1) The measures in this section have been disclosed in this document in accordance with OSFI Guideline – B20 - Residential Mortgage Underwriting Practices and Procedures (January 2018).
(2) 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.
(3) The province represents the location of the property in Canada.
(4) Includes multi-residential dwellings (4+ units) of $3,782 (October 31, 2021 – $3,783) of which $2,524 are insured (October 31, 2021 – $2,793).
(5) Variable rate mortgages account for 37% (October 31, 2021 – $28%) of the Bank's total Canadian residential mortgage portfolio.

Amortization period ranges for residential mortgages

The following table presents the distribution of residential mortgages by remaining amortization periods, and by geographic areas.

T46 Distribution of residential mortgages by remaining amortization periods, and by geographic areas (1)

	2022					
	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	29.2%	40.5%	28.5%	1.6%	0.2%	100%
International	62.8%	16.9%	17.5%	2.8%	–%	100%
			2021			
Canada	29.9%	38.5%	30.1%	1.3%	0.2%	100%
International	62.7%	17.4%	15.6%	4.3%	–%	100%

(1) The measures in this section have been disclosed in this document in accordance with OSFI Guideline – B20—Residential Mortgage Underwriting Practices and Procedures (January 2018).

Loan to value ratios

The Canadian residential mortgage portfolio is 72% uninsured (October 31, 2021 – 69%). The average loan-to-value (LTV) ratio of the uninsured portfolio is 49% (October 31, 2021 – 49%).

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.

T47 Loan to value ratios(1)

	Uninsured LTV ratios(2)	
	For the year ended October 31, 2022	
	Residential mortgages LTV%	Home equity lines of credit(3) LTV%
Canada:		
Atlantic provinces	**64.1%**	**63.8%**
Quebec	**64.4**	**69.4**
Ontario	**62.9**	**62.3**
Manitoba & Saskatchewan	**68.1**	**62.3**
Alberta	**67.7**	**71.0**
British Columbia & Territories	**63.1**	**61.5**
Canada	**63.4%**	**63.0%**
International	**72.7%**	**n/a**
	For the year ended October 31, 2021	
Canada	65.0%	64.4%
International	73.3%	n/a

(1) The measures in this section have been disclosed in this document in accordance with OSFI Guideline – B20 - Residential Mortgage Underwriting Practices and Procedures (January 2018).
(2) The province represents the location of the property in Canada.
(3) Includes all HELOCs. For Scotia Total Equity Plan HELOC's, 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

As part of its stress testing program, the Bank analyzes the impact of various combinations of home price declines and unemployment increases on the Bank's residential mortgage portfolios. Those results continue to show that credit losses and impacts on capital ratios are within a level the Bank considers manageable. In addition, the Bank has undertaken extensive all-Bank scenario analyses to assess the impact to the enterprise of different scenarios and is confident that it has the financial resources to withstand even a very negative outlook.

Loans to Canadian condominium developers

The Bank had loans outstanding to Canadian condominium developers of $2,134 million as at October 31, 2022 (October 31, 2021 – $1,775 million). This is a high quality portfolio with well-known developers who have long-term relationships with the Bank.

Regional non-retail exposures

The Bank's exposures outside Canada and the US are diversified by region and product and are sized appropriately relative to the credit worthiness of the counterparties (65% of the exposures are to investment grade counterparties based on a combination of internal and external ratings). The Bank's exposures are carried 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 during the year that materially impacted the Bank's exposures.

The Bank has no direct exposure to Russia or Ukraine. While some customers may be negatively impacted by the conflict in the region and by trade restrictions as a result of sanctions, the impact to the Bank, to date, is immaterial and appropriately mitigated.

The Bank's exposure to sovereigns was $60.5 billion as at October 31, 2022 (October 31, 2021 – $59.9 billion), $16.3 billion to banks (October 31, 2021 – $13.4 billion) and $128.2 billion to corporates (October 31, 2021 – $111.3 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 $0.4 billion as at October 31, 2022 (October 31, 2021 – $0.2 billion).

The Bank's regional credit exposures are distributed as follows:

T48 Bank's regional credit exposures distribution

As at October 31	2022							2021
($ millions)	Loans and loan equivalents(1)	Deposits with financial institutions	Securities(2)	SFT and derivatives(3)	Funded Total	Undrawn Commitments(4)	Total	Total
Latin America(5)	**$ 90,013**	**$ 8,982**	**$ 20,467**	**$ 2,854**	**$ 122,316**	**$ 8,542**	**$ 130,858**	$ 114,711
Caribbean and Central America	**12,667**	**3,469**	**4,387**	**14**	**20,537**	**3,649**	**24,186**	21,746
Europe, excluding U.K.	**7,912**	**1,704**	**3,199**	**2,583**	**15,398**	**8,900**	**24,298**	22,361
U.K.	**8,019**	**5,097**	**808**	**2,871**	**16,795**	**7,575**	**24,370**	24,046
Asia	**12,875**	**1,186**	**13,225**	**1,353**	**28,639**	**8,571**	**37,210**	37,290
Other(6)	**618**	**–**	**344**	**249**	**1,211**	**288**	**1,499**	1,766
Total	**$ 132,104**	**$ 20,438**	**$ 42,430**	**$ 9,924**	**$ 204,896**	**$ 37,525**	**$ 242,421**	$ 221,920

(1) Individual allowances for credit losses are $508. 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 $15,462 as at October 31, 2022 (October 31, 2021 – $12,755).
(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 $4,477 and collateral held against SFT was $124,900.
(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.
(5) Includes countries in the Pacific Alliance plus Brazil, Uruguay, Venezuela, Ecuador and Argentina.
(6) Includes Middle East and Africa.

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. Market risk includes trading risk, investment risk, structural interest rate risk and structural foreign exchange risk. Below is an index of market risk disclosures:

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 analysis (including economic value of equity and net interest income), stress testing, 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 and 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, and sensitivity 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 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 (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.

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 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 models that consider a number of inputs and are 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.

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 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 equity. The net interest income (NII) sensitivity 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 of equity (EVE) sensitivity measures the impact of a specified change in interest rates on the present value of the Bank's net assets. Limits for both measurements 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.

The net interest income and the economic value of equity result from the differences between yields earned on the Bank'snon-trading assets and interest expense paid on its liabilities. Net interest income and economic value of equity sensitivities measure the risk to the Bank's earnings and capital arising from adverse movements in interest rates that affect the Bank's banking book position. The Bank's banking book position reflects the mismatch of the maturity and re-pricing characteristics between the assets and liabilities and optional elements embedded in the Bank's

structural balance sheet (e.g. mortgage prepayment). The mismatch and embedded optional elements are inherent in the non-trading operations of the Bank and exposes it to changes 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.

Simulation modeling, sensitivity analysis, stress testing and VaR are used to assess exposures and for limit monitoring of the Bank's interest rate risk in the banking book. The Bank's interest rate risk exposure is estimated by simulating the banking book position under a range of rate shocks. The simulations incorporate maturities, renewal, and repricing characteristics of the banking book along with prepayment and redemption behaviour of loans and cashable investment products. 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.

Table T49 shows the pro-forma pre-tax impact on the Bank's net interest income over the next twelve months and economic value of equity of an immediate and sustained 100 basis points increase and decrease in interest rate across major currencies as defined by the Bank. The interest rate sensitivities tabulated are based on models that consider a number of inputs and are on a constant 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 2022, an immediate and sustained 100 basis point increase in interest rates across all major currencies and maturities would decrease pre-tax net interest income by approximately $340 million over the next 12 months, assuming no further management actions. During fiscal 2022, this measure ranged between increase of $245 million and decrease of $340 million.

This same increase in interest rates would result in an pre-tax decrease in the present value of the Bank's net assets of approximately $2,021 million. During fiscal 2022, this measure ranged between $1,041 million and $2,021 million. The directional sensitivity of these two key metrics is largely determined by the difference in time horizons (net interest 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 net interest income and economic value results are compared to the authorized Board limits. Both interest rate sensitivities remained within the Bank's approved consolidated limits in the reporting period.

T49 Structural interest sensitivity

	2022			2021(1)	
As at October 31 ($ millions)	Economic Value of Equity	Net Interest Income		Economic Value of Equity	Net Interest Income
Pre-tax impact of					
100bp increase in rates			100bp increase in rates		
Non-trading risk	**$ (2,021)**	**$ (340)**	Non-trading risk	$ (1,173)	$ 212
100bp decrease in rates			25bp decrease in rates		
Non-trading risk	**$ 1,659**	**$ 326**	Non-trading risk	$ 209	$ (64)

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

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 monthly 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, 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, 2022, 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 $55 million (October 31, 2021 – $43 million) in the absence of hedging activity, due primarily from exposure to US 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 not uncommon.

In fiscal 2022, the total one-day VaR for trading activities averaged $13.5 million, compared to $14.1 million in 2021, as the Bank took defensive positions against market volatilities driven by geopolitical tensions, high inflations and interest rate hikes.

T50 Market risk measures

	2022				2021			
($ millions)	Year end	Avg	High	Low	Year end	Avg	High	Low
Credit Spread plus Interest Rate	**$ 9.3**	**$ 12.0**	**$ 19.0**	**$ 7.2**	$ 10.3	$ 11.9	$ 23.2	$ 4.5
Credit Spread	**7.7**	**5.3**	**9.6**	**2.0**	2.0	5.4	12.7	0.5
Interest Rate	**8.4**	**11.4**	**19.6**	**5.7**	11.5	12.2	22.0	4.6
Equities	**3.4**	**4.0**	**6.8**	**1.7**	6.7	5.9	20.8	2.2
Foreign Exchange	**1.5**	**2.1**	**5.3**	**0.8**	2.0	2.7	5.7	1.4
Commodities	**5.2**	**3.1**	**5.8**	**1.0**	1.3	3.9	8.7	1.0
Debt Specific	**4.6**	**2.3**	**4.6**	**1.6**	1.5	2.8	5.1	1.5
Diversification Effect	**(10.6)**	**(10.0)**	**n/a**	**n/a**	(8.6)	(13.1)	n/a	n/a
All-Bank VaR	**$ 13.4**	**$ 13.5**	**$ 20.4**	**$ 7.8**	$ 13.2	$ 14.1	$ 32.8	$ 7.9
All-Bank Stressed VaR	**$ 27.4**	**$ 30.9**	**$ 58.4**	**$ 16.8**	$ 36.1	$ 36.2	$ 50.5	$ 22.0
Incremental Risk Charge	**$ 285.4**	**$ 233.8**	**$ 373.5**	**$ 148.6**	$ 159.5	$ 152.8	$ 295.0	$ 112.8

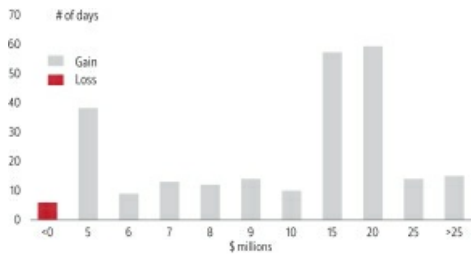
The Bank also calculates a Stressed VaR which uses the same basic methodology as the VaR. However, Stressed VaR is calculated using market volatility from a one-year time period identified as stressful, given the risk profile of the trading portfolio. Throughout 2022, the Stressed VaR was calculated using the 2008/2009 credit crisis period, surrounding the collapse of Lehman Brothers. In fiscal 2022, the average total one-day Stressed VaR for trading activities decreased to $30.9 million from $36.2 million in 2021, also because bank took defensive positions against economic uncertainties.

In fiscal 2022, the average IRC increased to $233.8 million from $152.8 million in 2021. The IRC utilization, which measures fixed income default and rating migration risk, went higher due to widening credit spreads.

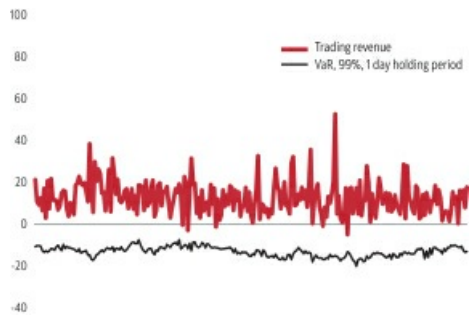
Description of trading revenue components and graphical comparison of VaR to daily P&L

Chart C30 shows the distribution of daily trading revenue for fiscal 2022 and Chart C31 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 $12.3 million per day, in line with the 2021 level. Revenue was positive on 97.6% of trading days during the year, which was worse than the level in 2021 due to higher market volatilities. During the year, the largest single day trading loss was $5.3 million which occurred on July 11, 2022, and was smaller than the total VaR of $13.5 million on the same day.

C30 Trading revenue distribution Year ended October 31, 2022



C31 Daily trading revenue vs. VaR $ millions, November 1, 2021 to October 31, 2022



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 captured under trading risk measures are related to the activities of Global Banking and Markets, whiles derivatives captured under non-trading risk measures comprise those used in asset/liability management and designated in a hedge relationship. 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.

T51 Market risk linkage to Consolidated Statement of Financial Position of the Bank

As at October 31, 2022 ($ millions)	Consolidated Statement of Financial Position	Market Risk Measure: Trading Risk	Market Risk Measure: Non-trading risk	Market Risk Measure: Not subject to market risk	Primary risk sensitivity of non-trading risk
Precious metals	$ 543	$ 543	$ –	$ –	n/a
Trading assets	113,154	113,117	37	–	Interest rate, FX
Derivative financial instruments	55,699	43,436	12,263	–	Interest rate, FX, equity
Investment securities	110,008	–	110,008	–	Interest rate, FX, equity
Loans	744,987	–	744,987	–	Interest rate, FX
Assets not subject to market risk (1)	325,027	–	–	325,027	n/a
Total assets	$ 1,349,418	$ 157,096	$ 867,295	$ 325,027	
Deposits	$ 916,181	$ –	$ 869,219	$ 46,962	Interest rate, FX, equity
Financial instruments designated at fair value through profit or loss	22,421	–	22,421	–	Interest rate, equity
Obligations related to securities sold short	40,449	40,449	–	–	n/a
Derivative financial instruments	65,900	40,685	25,215	–	Interest rate, FX, equity
Trading liabilities(2)	372	372	–	–	n/a
Retirement and other benefit liabilities	1,557	–	1,557	–	Interest rate, credit spread, equity
Liabilities not subject to market risk (3)	227,789	–	–	227,789	n/a
Total liabilities	$ 1,274,669	$ 81,506	$ 918,412	$ 274,751	

(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.

As at October 31, 2021 ($ millions)	Consolidated Statement of Financial Position	Market Risk Measure: Trading Risk	Market Risk Measure: Non-trading risk	Market Risk Measure: Not subject to market risk	Primary risk sensitivity of non-trading risk
Precious metals	$ 755	$ 755	$ –	$ –	n/a
Trading assets	146,312	146,238	74	–	Interest rate, FX
Derivative financial instruments	42,302	35,379	6,923	–	Interest rate, FX, equity
Investment securities	75,199	–	75,199	–	Interest rate, FX, equity
Loans	636,986	–	636,986	–	Interest rate, FX
Assets not subject to market risk (1)	283,290	–	–	283,290	n/a
Total assets	$ 1,184,844	$ 182,372	$ 719,182	$ 283,290	
Deposits	$ 797,259	$ –	$ 751,862	$ 45,397	Interest rate, FX, equity
Financial instruments designated at fair value through profit or loss	22,493	–	22,493	–	Interest rate, equity
Obligations related to securities sold short	40,954	40,954	–	–	n/a
Derivative financial instruments	42,203	35,702	6,501	–	Interest rate, FX, equity
Trading liabilities(2)	417	417	–	–	n/a
Retirement and other benefit liabilities	1,820	–	1,820	–	Interest rate, credit spread, equity
Liabilities not subject to market risk (3)	206,806	–	–	206,806	n/a
Total liabilities	$ 1,111,952	$ 77,073	$ 782,676	$ 252,203	

(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.

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 may be 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, 2022 unencumbered liquid assets were $260 billion (October 31, 2021 – $246 billion). Securities including NHA mortgage-backed securities, comprised 77% of liquid assets (October 31, 2021 – 67%). Other unencumbered liquid assets, comprising cash and deposits with central banks, deposits with financial institutions, precious metals and call and short loans, were 23% (October 31, 2021 – 33%). The increase in total unencumbered liquid assets was mainly attributable to an increase in foreign and Canadian government obligations, partially offset by a decrease in cash and deposits with central banks, other liquid securities and NHA mortgage-backed securities.

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, 2022. 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:

T52 Liquid asset pool

As at October 31, 2022 ($ 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	$ 56,720	$ –	$ 56,720	$ –	$ 5,254	$ 51,466	$ –
Deposits with financial institutions	9,175	–	9,175	–	400	8,775	–
Precious metals	543	–	543	–	–	543	–
Securities:							
Canadian government obligations	51,114	29,484	80,598	40,290	–	40,308	–
Foreign government obligations	98,673	108,134	206,807	104,052	–	102,755	–
Other securities	60,783	90,675	151,458	115,995	–	35,463	–
Loans:							
NHA mortgage-backed securities	29,409	–	29,409	8,571	–	20,838	–
Call and short loans	–	–	–	–	–	–	–
Total	$ 306,417	$ 228,293	$ 534,710	$ 268,908	$ 5,654	$ 260,148	$ –

As at October 31, 2021 ($ 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	$ 77,695	$ –	$ 77,695	$ –	$ 5,858	$ 71,837	$ –
Deposits with financial institutions	8,628	–	8,628	–	197	8,431	–
Precious metals	755	–	755	–	–	755	–
Securities:							
Canadian government obligations	47,772	20,311	68,083	30,490	–	37,593	–
Foreign government obligations	62,288	81,296	143,584	77,571	–	66,013	–
Other securities	98,476	69,368	167,844	128,979	–	38,865	–
Loans:							
NHA mortgage-backed securities	30,153	–	30,153	8,114	–	22,039	–
Call and short loans	20	–	20	–	–	20	–
Total	$ 325,787	$ 170,975	$ 496,762	$ 245,154	$ 6,055	$ 245,553	$ –

(1) Assets which are restricted from being used to secure funding for legal or other reasons.

A summary of total unencumbered liquid assets held by the parent bank and its branches, and domestic and foreign subsidiaries, is presented below:

T53 Total unencumbered liquid assets held by the parent bank and its branches, and domestic and foreign subsidiaries

As at October 31 ($ millions)	2022	2021
The Bank of Nova Scotia (Parent)	$ 184,848	$ 185,903
Bank domestic subsidiaries	26,912	18,267
Bank foreign subsidiaries	48,388	41,383
Total	$ 260,148	$ 245,553

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 (81%) 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:

T54 Asset encumbrance

As at October 31, 2022 ($ 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	$ 56,720	$ –	$ 56,720	$ –	$ 5,254	$ 51,466	$ –
Deposits with financial institutions	9,175	–	9,175	–	400	8,775	–
Precious metals	543	–	543	–	–	543	–
Liquid securities:							
Canadian government obligations	51,114	29,484	80,598	40,290	–	40,308	–
Foreign government obligations	98,673	108,134	206,807	104,052	–	102,755	–
Other liquid securities	60,783	90,675	151,458	115,995	–	35,463	–
Other securities	2,985	11,376	14,361	3,611	–	–	10,750
Loans classified as liquid assets:							
NHA mortgage-backed securities	29,409	–	29,409	8,571	–	20,838	–
Call and short loans	–	–	–	–	–	–	–
Other loans	723,389	–	723,389	3,658	77,122	11,657	630,952
Other financial assets(4)	254,935	(160,410)	94,525	18,450	–	–	76,075
Non-financial assets	61,692	–	61,692	–	–	–	61,692
Total	$ 1,349,418	$ 79,259	$ 1,428,677	$ 294,627	$ 82,776	$ 271,805	$ 779,469

As at October 31, 2021 ($ 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	$ 77,695	$ –	$ 77,695	$ –	$ 5,858	$ 71,837	$ –
Deposits with financial institutions	8,628	–	8,628	–	197	8,431	–
Precious metals	755	–	755	–	–	755	–
Liquid securities:							
Canadian government obligations	47,772	20,311	68,083	30,490	–	37,593	–
Foreign government obligations	62,288	81,296	143,584	77,571	–	66,013	–
Other liquid securities	98,476	69,368	167,844	128,979	–	38,865	–
Other securities	3,811	13,254	17,065	6,028	–	–	11,037
Loans classified as liquid assets:							
NHA mortgage-backed securities	30,153	–	30,153	8,114	–	22,039	–
Call and short loans	20	–	20	–	–	20	–
Other loans	614,926	–	614,926	5,964	65,647	10,527	532,788
Other financial assets(4)	194,100	(111,892)	82,208	6,651	–	–	75,557
Non-financial assets	46,220	–	46,220	–	–	–	46,220
Total	$ 1,184,844	$ 72,337	$ 1,257,181	$ 263,797	$ 71,702	$ 256,080	$ 665,602

(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, 2022 total encumbered assets of the Bank were $377 billion (October 31, 2021 – $335 billion). Of the remaining $1,051 billion (October 31, 2021 – $922 billion) of unencumbered assets, $272 billion (October 31, 2021 – $256 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, 2022 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 $55 million or $116 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, 2022 based on the average daily position in the quarter.

T55 Bank's average LCR(1)

For the quarter ended October 31, 2022 ($ millions) (2)	Total unweighted value (Average)(3)	Total weighted value (Average)(4)
High-quality liquid assets		
Total high-quality liquid assets (HQLA)	*	**$ 213,156**
Cash outflows		
Retail deposits and deposits from small business customers, of which:	$ 234,910	$ 20,569
Stable deposits	90,834	2,920
Less stable deposits	144,076	17,649
Unsecured wholesale funding, of which:	301,906	134,715
Operational deposits (all counterparties) and deposits in networks of cooperative banks	112,185	27,022
Non-operational deposits (all counterparties)	160,764	78,736
Unsecured debt	28,957	28,957
Secured wholesale funding	*	43,228
Additional requirements, of which:	269,605	52,928
Outflows related to derivative exposures and other collateral requirements	44,401	23,028
Outflows related to loss of funding on debt products	5,286	5,286
Credit and liquidity facilities	219,918	24,614
Other contractual funding obligations	3,123	3,036
Other contingent funding obligations(5)	537,088	6,736
Total cash outflows	*	**$ 261,212**
Cash inflows		
Secured lending (e.g. reverse repos)	$ 212,698	$ 43,966
Inflows from fully performing exposures	30,835	18,990
Other cash inflows	18,982	18,982
Total cash inflows	**$ 262,515**	**$ 81,938**

		Total adjusted value(6)
Total HQLA	*	**$ 213,156**
Total net cash outflows	*	**$ 179,274**
Liquidity coverage ratio (%)	*	**119%**

For the quarter ended October 31, 2021 ($ millions)		Total adjusted value(6)
Total HQLA	*	$ 197,528
Total net cash outflows	*	$ 158,799
Liquidity coverage ratio (%)	*	124%

* Disclosure is not required under regulatory guideline.
(1) This measure has been disclosed in this document in accordance with OSFI Guideline – Public Disclosure Requirements for Domestic Systemically Important Banks on Liquidity Coverage Ratio (April 2015).
(2) Based on the average daily positions of the 62 business days in the quarter.
(3) Unweighted values represent outstanding balances maturing or callable within the next 30 days.
(4) Weighted values represent balances calculated after the application of HQLA haircuts or inflow and outflow rates, as prescribed by the OSFI Liquidity Adequacy Requirements (LAR) guidelines.
(5) 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.
(6) Total adjusted value represents balances calculated after the application of both haircuts and inflow and outflow rates and any applicable caps.

HQLA is substantially comprised of Level 1 assets (as defined in the LAR guideline), such as cash, deposits with central banks available to the Bank in times of stress, and highly rated securities issued or guaranteed by governments, central banks and supranational entities.

The decrease in the Bank's average LCR for the quarter ended October 31, 2022 versus the quarter ended October 31, 2021 was attributable to growth in loans and mortgages, partially offset by growth in deposits. The Bank monitors its significant currency exposures, Canadian and U.S. dollars, in accordance with its liquidity risk management framework and risk appetite.

Net stable funding ratio

The Net Stable Funding Ratio (NSFR) requires institutions to maintain a stable funding profile in relation to the composition of their assets and off-balance sheet exposures. It is calculated as the ratio of available stable funding (ASF) to required stable funding (RSF), with assumptions defined in the OSFI LAR Guideline. The Bank is subject to a regulatory minimum NSFR of 100%.

ASF is defined as the portion of capital and liabilities expected to be reliable over the time horizons considered by the NSFR. RSF is a function of the liquidity characteristics and residual maturities of the various assets held by the bank as well as those of its off-balance sheet exposures.

The total weighted values for ASF and RSF included in the table that follows are derived by applying the assumptions specified in the LAR Guideline to balance sheet items, including capital instruments, wholesale funding, deposits, loans and mortgages, securities, derivatives and off-balance sheet items such as commitments to extend credit.

The following table presents the Bank's NSFR as at October 31, 2022.

T56 Bank's NSFR(1)

As at October 31, 2022 *($ millions)*	Unweighted Value by Residual Maturity				Weighted value(3)
	No maturity(2)	< 6 months	6-12 months	≥ 1 year	
Available Stable Funding (ASF) Item					
Capital:	$ 84,216	$ –	$ –	$ –	$ 84,216
Regulatory capital	84,216	–	–	–	84,216
Other capital instruments	–	–	–	–	–
Retail deposits and deposits from small business customers:	203,858	57,407	25,646	39,019	299,177
Stable deposits	83,478	15,792	8,562	9,029	111,469
Less stable deposits	120,380	41,615	17,084	29,990	187,708
Wholesale funding:	183,229	342,085	61,999	119,567	315,660
Operational deposits	99,835	5,547	–	–	52,691
Other wholesale funding	83,394	336,538	61,999	119,567	262,969
Liabilities with matching interdependent assets	–	2,511	3,605	18,008	–
Other liabilities:	62,535		93,562		21,029
NSFR derivative liabilities			12,288		
All other liabilities and equity not included in the above categories	62,535	59,265	1,961	20,048	21,029
Total ASF					**$ 720,082**
Required Stable Funding (RSF) Item					
Total NSFR high-quality liquid assets (HQLA)					$ 14,614
Deposits held at other financial institutions for operational purposes	$ 2,491	$ –	$ –	$ –	$ 1,245
Performing loans and securities:	97,618	199,931	58,778	523,286	562,464
Performing loans to financial institutions secured by Level 1 HQLA	313	58,438	1,026	–	3,862
Performing loans to financial institutions secured by non-Level 1 HQLA and unsecured performing loans to financial institutions	2,965	69,055	11,379	14,299	31,190
Performing loans to non-financial corporate clients, loans to retail and small business customers, and loans to sovereigns, central banks and PSEs, of which:	55,603	62,195	29,719	225,694	281,129
With a risk weight of less than or equal to 35% under the Basel II standardised approach for credit risk	–	608	1,054	2,091	2,190
Performing residential mortgages, of which:	21,731	8,906	15,984	277,034	225,504
With a risk weight of less than or equal to 35% under the Basel II standardised approach for credit risk	21,731	8,715	15,757	263,120	213,468
Securities that are not in default and do not qualify as HQLA, including exchange-traded equities	17,006	1,337	670	6,259	20,779
Assets with matching interdependent liabilities(4)	–	2,511	3,605	18,008	–
Other assets:	2,338		151,712		53,372
Physical traded commodities, including gold	2,338				1,987
Assets posted as initial margin for derivative contracts and contributions to default funds of CCPs			8,829		7,505
NSFR derivative assets			7,143		–
NSFR derivative liabilities before deduction of variation margin posted			32,992		1,650
All other assets not included in the above categories	–	60,530	–	42,218	42,230
Off-balance sheet items			468,180		18,232
Total RSF					**$ 649,927**
Net Stable Funding Ratio (%)					**111%**

(1) This measure has been disclosed in this document in accordance with OSFI Guideline-Net Stable Funding Ratio Disclosure Requirements (January 2021).
(2) Items in the "no maturity" time bucket do not have a stated maturity. These may include, but are not limited to, items such as capital with perpetual maturity, non-maturity deposits, short positions, open maturity positions, non-HQLA equities, and physical traded commodities.
(3) Weighted values represent balances calculated after the application of ASF and RSF rates, as prescribed by the OSFI Liquidity Adequacy Requirements (LAR) guideline.
(4) Interdependent assets and liabilities are primarily comprised of transactions related to the Canada Mortgage Bond program.

As at October 31, 2021 *($millions)*	Weighted value
Total ASF	$ 641,287
Total RSF	580,721
Net stable funding ratio (%)	110%

Available stable funding is primarily provided by the Bank's large pool of retail, small business and corporate customer deposits; secured and unsecured wholesale funding and capital. Required stable funding primarily originates from the Bank's loan and mortgage portfolio, securities holdings, off-balance sheet items and other assets.

The Bank's NSFR as at October 31, 2022 was higher compared to the previous year end primarily due to higher ASF from deposits and wholesale funding and lower RSF from securities, partially offset by higher RSF from mortgage and loan growth.

Regulatory liquidity developments

OSFI's changes to the LAR Guideline will be effective April 2023 and primarily comprise of enhancements to the Net Cumulative Cash Flow supervisory tool. Modifications are focused on the introduction of cash outflow factors for undrawn loan commitments and changes to cash inflow and outflow factors for certain loan and deposit products.

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 $350 billion as at October 31, 2022 (October 31, 2021 – $324 billion). A portion of commercial deposits, particularly those of an operating or relationship nature, are also 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 $204 billion (October 31, 2021 – $177 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, market capacity and diversification 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 programs (such as Canada Mortgage Bonds), uninsured residential mortgages through the Bank's Covered Bond Program, retail credit card receivables through the Trillium Credit Card Trust II program, retail indirect auto loan receivables through the Securitized Term Auto Receivables Trust program and unsecured personal lines of credit through the Halifax Receivables Trust program. CMHC securitization programs, while included in the Bank's view of wholesale debt issuance, do 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 retail credit card receivables through the Trillium Credit Card Trust II program. The Bank may issue its Covered Bond Program (listed with the U.K. Listing Authority and the Swiss Stock Exchange), in Europe, the United Kingdom, 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 (listed with the U.K. Listing Authority and the Swiss Stock Exchange) and Singapore Medium Term Note Programme (listed with the Singapore Exchange and the Taiwan Exchange).

The Department of Finance's bail-in regulations under the Canada Deposit Insurance Corporation (CDIC) Act and the Bank Act, became effective September 23, 2018. Senior long-term debt issued by the Bank on or after September 23, 2018, that has an original term greater than 400 days and is marketable, subject to certain exceptions, is subject to the Canadian Bank Recapitalization (Bail-in) regime. Under the Bail-in regime, in circumstances when the Superintendent of Financial Institutions has determined that a bank may no longer be viable, the Governor in Council may, upon a recommendation of the Minister of Finance that they are of the opinion that it is in the public interest to do so, grant an order directing the CDIC to convert all or a portion of certain shares and liabilities of that bank into common shares. As at October 31, 2022, issued and outstanding liabilities of $73 billion (October 31, 2021 – $50 billion) were subject to conversion under the bail-in regime.

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.

T57 Wholesale funding(1)

As at October 31, 2022 ($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)	$ 2,182	$ 799	$ 319	$ 600	$ 298	$ 4,198	$ 128	$ 12	$ –	$ 4,338
Bearer deposit notes, commercial paper and short-term certificate of deposits	8,739	18,053	29,042	17,568	9,958	83,360	824	416	50	84,650
Asset-backed commercial paper(3)	1,767	5,418	2,337	68	–	9,590	–	–	–	9,590
Senior notes(4)(5)	1,998	1,605	8,335	1,925	5,161	19,024	2,720	6,048	11,003	38,795
Bail-inable notes(5)	1,311	682	1,420	5,500	5,408	14,321	13,678	29,887	14,630	72,516
Asset-backed securities	–	1	–	1	592	594	3	648	103	1,348
Covered bonds	–	859	3,919	–	2,356	7,134	4,375	26,973	7,423	45,905
Mortgage securitization(6)	–	1,721	806	1,048	2,562	6,137	4,069	8,854	4,778	23,838
Subordinated debentures(7)	–	–	–	–	–	–	3	2,108	8,566	10,677
Total wholesale funding sources	$ 15,997	$ 29,138	$ 46,178	$ 26,710	$ 26,335	$ 144,358	$ 25,800	$ 74,946	$ 46,553	$ 291,657
Of Which:										
Unsecured funding	$ 14,231	$ 21,138	$ 39,117	$ 25,592	$ 20,825	$ 120,903	$ 17,353	$ 38,471	$ 34,248	$ 210,975
Secured funding	1,766	8,000	7,061	1,118	5,510	23,455	8,447	36,475	12,305	80,682

As at October 31, 2021 ($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)	$ 1,348	$ 302	$ 220	$ 151	$ 348	$ 2,369	$ 166	$ –	$ –	$ 2,535
Bearer deposit notes, commercial paper and short-term certificate of deposits	5,030	11,249	15,037	18,439	12,169	61,924	537	162	48	62,671
Asset-backed commercial paper(3)	1,328	2,248	965	–	–	4,541	–	–	–	4,541
Senior notes(4)(5)	3	2,254	6,029	1,283	4,476	14,045	8,144	5,224	10,385	37,798
Bail-inable notes(5)	–	77	127	1	–	205	14,421	21,827	13,207	49,660
Asset-backed securities	–	606	–	–	–	606	752	604	85	2,047
Covered bonds	–	1,789	–	–	1,788	3,577	7,412	15,206	5,055	31,250
Mortgage securitization(6)	–	669	1,382	928	720	3,699	6,154	11,008	4,590	25,451
Subordinated debentures(7)	26	–	49	–	49	124	–	1,931	6,352	8,407
Total wholesale funding sources	$ 7,735	$ 19,194	$ 23,809	$ 20,802	$ 19,550	$ 91,090	$ 37,586	$ 55,962	$ 39,722	$ 224,360
Of Which:										
Unsecured funding	$ 6,408	$ 13,882	$ 21,462	$ 19,874	$ 17,041	$ 78,667	$ 23,268	$ 29,144	$ 29,992	$ 161,071
Secured funding	1,327	5,312	2,347	928	2,509	12,423	14,318	26,818	9,730	63,289

(1) Wholesale funding sources exclude repo transactions and bankers acceptances, which are disclosed in the T58 Contractual maturities. Amounts are based on remaining term to maturity.
(2) Only includes commercial bank deposits.
(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 $260 billion as at October 31, 2022 (October 31, 2021 – $246 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, 2022, 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.

T58 Contractual maturities

($ millions)	As at October 31, 2022									
	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	$ 57,217	$ 481	$ 171	$ 94	$ 89	$ 298	$ 464	$ 390	$ 7,234	$ 66,438
Trading assets	2,228	5,501	6,338	4,073	2,519	8,652	15,791	19,323	48,729	113,154
Securities purchased under resale agreements and securities borrowed	132,383	28,000	13,781	997	152	–	–	–	–	175,313
Derivative financial instruments	5,227	5,797	4,166	2,749	2,653	7,386	14,538	13,183	–	55,699
Investment securities – FVOCI	3,886	6,929	4,983	3,574	10,347	8,466	29,274	13,809	3,442	84,710
Investment securities – amortized cost	19	746	314	1,945	854	2,113	4,957	12,662	–	23,610
Investment securities – FVTPL	–	–	–	–	–	–	54	8	1,626	1,688
Loans	61,748	39,627	33,765	37,342	32,941	95,758	339,211	49,828	54,767	744,987
Residential mortgages	2,523	5,132	8,614	14,293	10,995	42,088	227,488	37,498	648(1)	349,279
Personal loans	3,909	2,023	3,287	3,415	3,138	13,008	24,271	6,610	39,770	99,431
Credit cards	–	–	–	–	–	–	–	–	14,518	14,518
Business and government	55,316	32,472	21,864	19,634	18,808	40,662	87,452	5,720	5,179(2)	287,107
Allowance for credit losses	–	–	–	–	–	–	–	–	(5,348)	(5,348)
Customers' liabilities under acceptances	15,418	3,812	191	55	18	–	–	–	–	19,494
Other assets	–	–	–	–	–	–	–	–	64,325	64,325
Total assets	278,126	90,893	63,709	50,829	49,573	122,673	404,289	109,203	180,123	1,349,418
Liabilities and equity										
Deposits	$ 97,418	$ 63,589	$ 67,249	$ 48,001	$ 53,602	$ 43,075	$ 83,647	$ 28,645	$ 430,955	$ 916,181
Personal	12,910	12,478	14,358	12,931	12,872	13,870	13,361	639	172,473	265,892
Non-personal	84,508	51,111	52,891	35,070	40,730	29,205	70,286	28,006	258,482	650,289
Financial instruments designated at fair value through profit or loss	337	658	727	900	1,189	5,989	2,190	10,431	–	22,421
Acceptances	15,449	3,812	191	55	18	–	–	–	–	19,525
Obligations related to securities sold short	539	1,507	890	1,817	2,404	3,959	5,437	7,426	16,470	40,449
Derivative financial instruments	3,386	4,968	4,876	3,032	3,181	8,721	17,231	20,505	–	65,900
Obligations related to securities sold under repurchase agreements and securities lent	128,128	8,596	2,153	72	–	76	–	–	–	139,025
Subordinated debentures	–	–	–	–	–	–	1,943	6,526	–	8,469
Other liabilities	3,914	1,342	2,331	1,713	695	7,526	5,404	7,150	32,624	62,699
Total equity	–	–	–	–	–	–	–	–	74,749	74,749
Total liabilities and equity	249,171	84,472	78,417	55,590	61,089	69,346	115,852	80,683	554,798	1,349,418
Off-Balance sheet commitments										
Credit commitments(3)	$ 8,531	$ 9,272	$ 19,662	$ 23,795	$ 20,971	$ 35,498	$ 126,074	$ 23,164	$ –	$ 266,967
Financial guarantees(4)	–	–	–	–	–	–	–	–	41,977	41,977
Outsourcing obligations(5)	18	36	53	53	53	208	61	35	–	517

(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.

T58 Contractual maturities

($ 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
	As at October 31, 2021									
Assets										
Cash and deposits with financial institutions and precious metals	$ 78,205	$ 539	$ 312	$ 162	$ 273	$ 397	$ 792	$ 655	$ 5,743	$ 87,078
Trading assets	1,880	4,353	2,734	2,558	1,687	6,768	19,130	20,323	86,879	146,312
Securities purchased under resale agreements and securities borrowed	96,026	17,969	9,870	2,446	1,428	–	–	–	–	127,739
Derivative financial instruments	2,744	4,335	3,267	1,677	1,493	11,995	4,451	12,340	–	42,302
Investment securities – FVOCI	3,387	4,523	4,848	3,096	1,923	12,366	14,656	7,846	3,144	55,789
Investment securities – amortized cost	18	578	1,267	1,544	878	3,334	5,821	4,717	–	18,157
Investment securities – FVTPL	–	–	–	–	–	–	–	–	1,253	1,253
Loans	43,467	31,233	27,834	30,467	29,347	94,083	286,993	42,959	50,603	636,986
Residential mortgages	2,453	4,264	7,536	12,387	12,246	47,790	199,553	31,529	1,920(1)	319,678
Personal loans	3,472	2,195	3,188	3,099	3,103	11,309	22,105	6,227	36,842	91,540
Credit cards	–	–	–	–	–	–	–	–	12,450	12,450
Business and government	37,542	24,774	17,110	14,981	13,998	34,984	65,335	5,203	5,017(2)	218,944
Allowance for credit losses	–	–	–	–	–	–	–	–	(5,626)	(5,626)
Customers' liabilities under acceptances	15,094	4,099	850	225	136	–	–	–	–	20,404
Other assets	–	–	–	–	–	–	–	–	48,824	48,824
Total assets	240,821	67,629	50,982	42,175	37,165	128,943	331,843	88,840	196,446	1,184,844
Liabilities and equity										
Deposits	$ 63,207	$ 49,447	$ 44,953	$ 33,565	$ 29,960	$ 42,800	$ 61,816	$ 22,742	$ 448,769	$ 797,259
Personal	10,156	13,051	13,358	7,345	6,168	6,512	8,263	102	178,596	243,551
Non-personal	53,051	36,396	31,595	26,220	23,792	36,288	53,553	22,640	270,173	553,708
Financial instruments designated at fair value through profit or loss	86	306	1,069	817	983	4,302	2,613	12,317	–	22,493
Acceptances	15,131	4,099	850	225	136	–	–	–	–	20,441
Obligations related to securities sold short	473	312	956	324	594	2,312	11,388	7,481	17,114	40,954
Derivative financial instruments	2,228	3,668	2,150	2,663	2,622	11,051	5,352	12,469	–	42,203
Obligations related to securities sold under repurchase agreements and securities lent	104,216	9,109	6,126	3,826	87	–	105	–	–	123,469
Subordinated debentures	–	–	–	–	–	–	1,797	4,500	37	6,334
Other liabilities	4,650	1,514	2,122	1,124	2,931	5,176	8,783	6,573	25,926	58,799
Total equity	–	–	–	–	–	–	–	–	72,892	72,892
Total liabilities and equity	189,991	68,455	58,226	42,544	37,313	65,641	91,854	66,082	564,738	1,184,844
Off-Balance sheet commitments										
Credit commitments(3)	$ 6,340	$ 7,526	$ 17,894	$ 24,323	$ 19,567	$ 34,056	$ 122,565	$ 7,514	$ –	$ 239,785
Financial guarantees(4)	–	–	–	–	–	–	–	–	38,598	38,598
Outsourcing obligations(5)	19	38	56	56	56	224	260	46	–	755

(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.

Principal Risks – Non-Financial

Money Laundering, Terrorist Financing and Sanctions Risk

Money Laundering, Terrorist Financing (ML/TF) and Sanctions risks are the susceptibility of Scotiabank to be used by individuals or organizations to launder the proceeds of crime, finance terrorism, or violate economic sanctions. They also include the risk that the Bank 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 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 AML/ATF Program"). The Board appointed Group Chief Anti-Money Laundering Officer, who is also the head of Financial Crime Risk Management (FCRM) is responsible for the AML/ATF Program, which includes the development and application of compliance policies, procedures, the assessment of money laundering, terrorist-financing and sanctions risks, and the maintenance of an ongoing training program. The effectiveness of the AML/ATF and Sanctions Program is subject to regular review and independent assessment conducted by the Audit Department. FCRM establishes enterprise standards to assess customers for money laundering, terrorist financing and sanctions risk.

The Bank conducts an enterprise-wide annual self-assessment of the ML/TF and sanctions risks inherent in its business units, as well as an assessment of the control measures in place to manage those risks. The process is led by the Bank's AML Risk unit, the results of which are shared with the Bank's senior management. All active employees are provided with mandatory AML/ATF and Sanctions training on an annual basis. The Bank performs 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, its material ultimate 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 tailored monitoring of its customers to detect and report suspicious transactions and activity, and conducts customer and transaction screening against terrorist, sanctions, and other designated watch-lists.

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 third party risk and legal risk but excludes strategic risk and reputational risk. It exists in some form in each of the Bank's business and support activities, and third parties to whom activities have been outsourced. It can result in financial loss, regulatory sanctions and damage to the Bank's reputation. Operational risk management refers to the discipline of systematic identification, assessment, measurement, mitigation, monitoring, and reporting of operational risk.

The Bank's Operational Risk Management Framework (ORMF) outlines a structured approach for the effective management of enterprise-wide operational risk in a manner consistent with best practices and regulatory requirements, including those issued by OSFI in their Operational Risk Management Guideline (OSFI E21). The ORMF is supplemented by additional policies, processes, standards and methodologies. The ORMF supports the governance and management of all other non-financial risks. The Framework is approved by the Bank's Operational Risk Committee and addresses program governance, risk culture and risk appetite along with the following key program components:

Risk Identification and Assessment

Risk identification and assessment is a critical part of effectively managing operational risk. Risks are identified, classified, and assessed, and their potential impact is evaluated and reported to management and the Board. Operational risk management tools and programs are in place to support the identification and assessment of operational risk with each having their defined methodology and/or standards. The key tools include an Operational Risk Dictionary, Risk and Control Self-Assessments (RCSA), Scenario Analysis, and New Initiatives Risk Assessment.

Risk Measurement

Operational Risk Events. The goal of Operational Risk Event reporting is to manage, mitigate and monitor operational risk within the organization. The data captured provides meaningful information for assessing and mitigating operational risk exposure at the Bank as a result of event root cause analysis and evaluation of internal controls. Timely, accurate and complete reporting of Operational Risk Event data assists the Bank in maintaining a strong risk culture and promotes transparency of the financial impact of Operational Risk Events by aggregating losses and monitoring performance to indicate whether the Bank is operating within its risk appetite.

Operational Risk Capital. Operational risk capital refers to regulatory and internal capital which is quantified as a reserve for unexpected losses resulting from operational risk. Operational risk capital is a component of the total amount of risk capital that the Bank holds.

Risk Mitigation

Controls are identified and assessed through the various Operational Risk Management tools. In cases where controls are deemed deficient a remedial action will be required, which in turn will help to mitigate residual risk. Operational risk response decisions include mitigation, transfer, acceptance, and avoidance of operational risks.

Risk Monitoring, Analytics, and Reporting

The Bank has processes in place for the ongoing monitoring of operational risk. These monitoring activities can provide an early warning of emerging issues, triggering timely management response. In addition, these activities allow for review and analysis of the risk profile in relation to risk appetite or other key indicators to identify when events may be approaching or exceeding thresholds, requiring action and/or escalation. Operational risk data is collected in risk systems and used for reporting. Operational risk reporting facilitates distribution and escalation of operational risk information to the relevant parties and provides stakeholders involved in operational risk management activities access to reliable data in a consistent and timely manner to support risk-based decision making.

Cyber Security and Information Technology (IT) Risk

IT Risk is the risk of financial loss, disruption or damage to reputation from a failure of information technology systems. Cyber Security risks are the unique IT risks faced as a result of using interconnected systems and digital technologies.

The Cyber Security and IT risk landscape continues to evolve across the financial industry. The increasing use of digital delivery channels to deliver financial services exposes the Bank to various vectors of attack. Threat actors (individuals, organized crime rings and nation state sponsored) continue to target financial institutions to steal data, money or to disrupt operations. These events may negatively impact the Bank's operational environment, our customers and other third parties.

The Board of Directors approves the Information Technology and Information Security Risk Management Framework, which along with its respective policies and other frameworks are focused on safeguarding the Bank and its customers' information, ensuring the Bank's IT environment is secure and resilient in support of our business objectives. The Bank continues to expand its cyber security capabilities to defend against potential threats and minimize impact to the business.

Compliance Risk

Compliance Risk is the risk of an activity not being conducted in conformity with applicable laws, rules, regulations and prescribed practices ("regulatory requirements"), as well as compliance related internal policies and procedures, and ethical standards expected by regulators, customers, investors, employees and other stakeholders. Compliance Risk includes Regulatory Compliance Risk, Conduct Risk, and Privacy Risk.

Regulatory Compliance Risk is the risk that business activity may not be conducted in conformance with all applicable regulatory requirements wherever the Bank does business.

Conduct Risk are risks arising from actions or behaviours of the Bank's officers, directors, employees, or the conduct of the Bank's business (directly or indirectly), not in conformity with the Bank's values or principles for ethical conduct and which has, or has the potential to have, an adverse impact on the Bank, the Bank's customers or employees, or integrity of the financial markets in which the Bank operates.

Privacy Risk is the risk that arises from contraventions of applicable privacy laws, regulations, standards and regulatory expectations; ethical or operational standards set out in the Bank's Code of Conduct, or other Bank policies, procedures, manuals, guidelines; and/or employees' responsibility to respectfully treat the Personally Identifiable Information (PII) of its customers, employees and other stakeholders.

The Board approves the Compliance Risk Summary Framework that describes the general policies and principles applicable to compliance risk management within Scotiabank and encompasses the Bank's Compliance Management Framework (CMF) as contemplated by OSFI Guideline E-13. The primary objective of the Bank's CMF is to provide assurance that the Bank's business activities are being conducted in a manner compliant with all applicable regulations in Scotiabank's countries of operations and in line with the Bank's risk appetite. The Compliance Risk Summary Framework is an integral part of the enterprise-wide policies and procedures that collectively articulate the Bank's governance components, responsibilities and programs which support the effective management of compliance risk.

Environmental, Social and Governance Risk

ESG Risk refers to the possibility that environmental, social, and governance concerns related to Scotiabank's conduct, business practices or relationships could result in adverse impacts to the Bank.

The Bank is exposed to ESG risks due to both its internal operations and its business activities. The Bank considers Environmental Risk to be the potential adverse impacts to a business due to the loss of, or damage to the natural environment and/or biodiversity, such as land, water, plants, animals, natural resources, ecosystems, and the atmosphere. The Bank considers the physical and transition risks associated with climate change to be a component of Environmental Risk. Scotiabank's Environmental Risk Management Policy outlines the key principles and commitments that guide the Bank in how it manages environmental risks as part of its day-to-day operations, lending and investment practices, supplier agreements, management of real estate holdings, and internal and external reporting protocols. This policy is supplemented by specific processes and guidelines relating to individual business lines.

Social Risk is defined to be the potential adverse impacts to a business that can arise due to the mismanagement of social considerations that can cause actual or perceived negative impacts on people and communities. Social considerations include, but are not limited to, human rights (including human trafficking and modern slavery); Indigenous rights; labour standards and working conditions; diversity, equity, and inclusion; accessibility; community health, safety, and security; disadvantaged and vulnerable groups; cultural property and heritage; and land acquisition and involuntary resettlement. Scotiabank's high-level approach to respecting and promoting human rights are communicated in the Code of Conduct and in the Global Human Rights Statement.

Corporate governance refers to the oversight mechanisms and the way in which the Bank is governed. It encompasses the Bank's policies and processes, how decisions are made, and how it deals with the various interests of, and relationships with, its many stakeholders, including shareholders, customers, employees, regulators, and the broader community. Governance Risk refers to the adverse impacts to a business that can arise because of poor or ineffective corporate governance mechanisms and controls. The Bank's Corporate Governance Policies are designed to ensure the independence of the Board and its ability to effectively supervise management's operation of the Bank.

The ESG Risk department has primary responsibility for establishing the related policies, processes and standards associated with mitigating ESG risk in the Bank's lending activities. To safeguard the Bank and the interests of its stakeholders against ESG risks, Scotiabank has established clear governance structures and risk management elements that identify, assess, measure, monitor, manage, mitigate, and report ESG risks. These various components are described in the Bank's ESG Risk Management Framework. This framework, in conjunction with its supporting policies, processes, and guidelines, assist the Bank in managing ESG risks in a manner that is consistent with regulatory requirements, industry standards, best practices, and its risk appetite.

In the area of project finance, the international Equator Principles (EPs) framework has been embedded within the Bank's internal processes since 2006. This framework enables financial institutions, in partnership with its clients, to identify, assess, manage, and report environmental and social risks and impacts associated with the large-scale infrastructure and industrial development projects that it finances. The EPs apply to project finance loans and advisory assignments where total capital costs of the project exceed US$10 million, and to certain project-related corporate loans, bridge loans, and project-related refinance and project-related acquisition finance loans. The Bank applies the EPs to in-scope transactions to ensure that the projects that we finance and advise on are developed in an environmentally and socially responsible manner. Specifically, the framework provides safeguards for protecting the natural environment, biodiversity, workers, and communities, including respecting the rights of vulnerable and/or disadvantage populations such as children and indigenous peoples.

In 2022, various regulators, including OSFI, announced draft climate-related disclosure guidelines that are aligned to the Task Force on Climate-related Financial Disclosures (TCFD) recommendations. In addition, standard setting bodies such as the International Sustainability Standards Board (ISSB) published draft climate and sustainability-related disclosures for consultation. The Bank participated in the reviewing these draft guidelines and the Bank actively monitors policy and legislative requirements through ongoing dialogue with government, industry, and stakeholders in the 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.

ESG Reporting

Scotiabank is a signatory to and a participant in key global initiatives that advance transparency and disclosures in sustainability. The Bank's ESG reporting is informed by recommendations or requirements in several global sustainability disclosure standards, frameworks, and initiatives including, but not limited to, the TCFD, CDP (formerly Carbon Disclosure Project), the Partnership for Carbon Accounting Financials (PCAF), the Sustainability Accounting Standards Board (SASB), the Global Reporting Initiative (GRI), the UN Global Compact (UNGC), and the Sustainable Development Goals (SDGs). ESG reporting and mapping to disclosures can be found on the Bank's website under Responsibility & Social Impact, ESG Publications and Policies.

TCFD Disclosures

In 2018, Scotiabank announced its support for the TCFD recommendations. The implementation of the recommendations across the Bank is a multi-year journey.

Governance

Board Oversight

As the topic of climate change requires a multidisciplinary approach, the risks, and opportunities it poses to the Bank are addressed by the Board of Directors and its committees. The following Board committees provide ongoing oversight, at minimum, annually, but are engaged as important matters arise:

- *Risk Committee*: Retains oversight of ESG Risks, including climate-related risks, and periodically reviews and approves the Bank's key risk management policies, frameworks, and limits to ensure that management is operating within the Bank's Enterprise Risk Appetite Framework.
- *Corporate Governance Committee*: Evaluates the Bank's environmental and social performance and assesses best practices for ESG disclosure; examines current and emerging ESG topics, considers their implications on the Bank's strategy and reviews the Bank's annual ESG Report; and acts in an advisory capacity through a continuing assessment of the Bank's approach to corporate governance and makes policy recommendations, including on topics such as human rights.
- *Audit & Conduct Review Committee*: Oversees climate-related disclosure as part of the Bank's financial reporting, sets standards of conduct for ethical behaviour and oversees conduct risk management, and consumer protection.
- *Human Capital & Compensation Committee*: Oversees human capital and compensation strategies related to diversity, equity and inclusion, employee health, safety, and well-being and other ESG policies and practices.

Management's Role

The Board of Directors is supported by the President and Chief Executive Officer (CEO) and Chief Risk Officer (CRO). The CRO has delegated their authority over the oversight of ESG risk to the Operational Risk Committee (ORC). The ORC provides effective oversight and challenge of the Bank's management of environmental and social risks. Its responsibilities include monitoring of the ESG risk profile, recommending approval of relevant risk frameworks, policies, risk appetite statements and limits to the ORC.

Furthermore, a dedicated Corporate ESG Committee assists the Bank in achieving its ESG objectives by providing strategic guidance and advice on the Bank's ESG priorities and commitments. It recommends approval of corporate ESG, climate change and human rights related strategies and disclosures to the Operating Committee. This Committee is also notified of approved ESG Risk management policies and frameworks, and escalations of any ESG Risk metric or any corresponding sub-metric breaches.

Strategy

In October 2021, Scotiabank joined the Net Zero Banking Alliance (NZBA), re-enforcing the Bank's commitment in playing a significant role to finance the climate transition and support collaborative approaches between the public and private sectors to reach the goal of net-zero by 2050. Scotiabank released its inaugural Net-zero Pathways report in March 2022, which outlined interim (2030) targets for the Bank's Oil & Gas and Power & Utilities sector portfolios. The Bank will report annually on its plans and progress towards establishing additional sector targets and achieving these targets. As part of this program, Scotiabank's CAD$10 million Net-Zero Research Fund, established in 2021, has distributed CAD $2 million in funding to date to stimulate pioneering research to support the decarbonization of the economy. The Bank has also committed to net-zero operations by 2030. This includes interim targets of securing 100% non-emitting electricity in Canada by 2025 and globally by 2030. The Bank achieved its 25% by 2025 absolute operational emission reduction target in 2021.

In addition, the Bank increased its climate commitment to mobilize $350 billion by 2030 to reduce the impacts of climate change. This includes lending, investing, finance and advisory services, as well as investments in the Bank's direct operations and communities where it operates, to help the Bank capitalize on the global transition to a low-carbon future. The Sustainable Finance Group within Global Banking and Markets continues to grow and works closely with Scotiabank partner teams to provide financial solutions and advice across sustainable finance products to corporate, financial, public sector and institutional clients across our global footprint.

Risk Management

Climate change risk refers to the possibility that climate change issues associated with Scotiabank, or its customers could negatively affect the Bank's performance by giving rise to or heighten credit, reputational, operational, or legal risk. Climate change risks could be in the form of physical or transition risk. Examples of physical risk considerations include severe weather (e.g., floods, hurricanes, extreme cold or heat). Examples of transition risk considerations include policy/regulatory actions such as subsidies, taxes, or increased fuel costs, as well as changing market conditions.

The Bank utilizes a comprehensive environmental risk management process where the identification, assessment and management of climate change risk is done through due diligence as part of the overall existing environmental risk assessment and credit adjudication processes. We continue to advance our capabilities and approach to climate risk management:

- The Bank has a Climate Change Risk Assessment (CCRA) process that evaluates both the physical and transition risks a client may face, and their level of awareness to such risks. The Bank assessed its exposure to the sectors with the highest vulnerability to physical and transition climate risk drivers. The CCRA compliments the sector sensitivity analysis by capturing borrower level mitigation factors such as geography, location of assets, and climate-specific management strategies. The CCRA and climate sector vulnerability results have been included within credit industry reviews to assess climate risk drivers and determine their potential materiality.

- A module on climate change risk is delivered in the annual mandatory environmental risk training for all banking officers and credit adjudicators.
- The Bank is developing methods to integrate climate scenario modelling into our enterprise stress testing framework, using three scenarios from the Network for Greening the Financial System (NGFS): Nationally Determined Contributions, Delayed Transition, and Net Zero 2050. These scenarios cover different quadrants of the NGFS framework, which is characterized by varying levels of physical and transition risk. We have piloted these climate scenarios to predict credit risk to our non-retail lending portfolio in near-term (2025 and 2030) and long-term horizons (2050). We are refining our methods and scaling up our analyses to examine these risks enterprise-wide. Beyond this work, we are conducting physical risk analyses to assess climate-related risks to our retail lending portfolio.
- The Bank is a participant in industry groups to develop consistent methodologies and metrics for TCFD reporting.
- The Bank is a participant in the United National Environment Program – Finance Initiative (UNEP FI) TCFD and Climate Risk Program. The program is meant to assist the financial sector in developing sound practices regarding climate risk.
- The Bank collaborates extensively with sector and non-governmental organizations that include the Institute of International Finance's (IIF) Sustainable Finance Working Group, Canadian Business for Social Responsibility (CBSR) Net-Zero Working Group, and Canadian Transition Finance Set of Principles and Transition Taxonomy.

Metrics and Targets

Scotiabank states, monitors, and reports on climate change related performance and targets annually in Scotiabank's ESG Report. As part of the Climate Commitments, the Bank is tracking the initiatives that underlie its commitment through the metrics and targets it has adopted pursuant to these Commitments, including a target to reduce operational GHG emissions and to mobilize $350 billion to reduce the impacts of climate change.

Additionally, the Bank has an ESG Performance Metric (ESGPM) that is included in the Enterprise Risk Appetite Framework as a risk appetite metric. The ESGPM is a composite measure of ESG risk based on sub-metrics which informs on reputational, credit, and operational categories. The metric is internally reported quarterly, in accordance with other risk appetite metrics.

In 2021, TCFD published revised guidance that expanded the definition of carbon-related assets found in their 2017 Annex. The process to calculate the Bank's credit exposures to carbon-related sectors, using this new definition, is under development.

Data Risk

Data risk is the exposure to the adverse financial and non-financial consequences (e.g., revenue loss, reputational risk, regulatory risk, sub-optimal management decisions) caused by mismanagement, misunderstanding or misuse of the Bank's data assets. This risk may arise from a lack of data risk awareness; insufficient data risk oversight, governance and controls; inadequate data management and poor data quality; inferior data security and protection; and inappropriate, unintended or unethical data usage.

The Data Risk Management Framework (DRMF) outlines the overarching guiding principles for data risk management and defines the governance structure of the enterprise data risk management program, recognizing the collaborative nature of data risk management and oversight. The Data Risk Management Policy (DRMP) categorizes and explains risks associated with data throughout the data lifecycle; and outlines the interaction model and roles and responsibilities for key stakeholders involved in managing the data risk across the organization.

Model Risk

Model risk is the risk of adverse financial (e.g., capital, losses, revenue) and reputational consequences arising from the design, development, implementation and/or use of a model. It can originate from, inappropriate specifications; incorrect parameter estimates; flawed hypotheses and/or assumptions; mathematical computation errors; inaccurate, inappropriate or incomplete data; inappropriate, improper or unintended usage; and inadequate monitoring and/or controls.

The Model Risk Management Framework outlines the Bank's approach for effective governance and oversight of model risk consistent with the policies and processes outlined in the Bank's Model Risk Management Policy (MRMP). The MRMP describes the overarching principles, policies, and procedures that provide the framework for managing model risk. All models, whether developed by the Bank or vendor-supplied, that meet the Bank's model definition are covered by this Policy. The MRMP also clearly defines roles and responsibilities for key stakeholders involved in the model risk management cycle.

Reputational Risk

Reputational risk is the risk that negative publicity or stakeholder sentiment 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.

The Bank has an Enterprise Reputational Risk Policy, as well as policies and procedures for managing suitability risk, and reputational and legal risk related to structured finance transactions. Reputational risk is managed and controlled by the Scotiabank Code of Conduct, governance practices and risk management programs, policies, procedures and training. All directors, officers and employees have a responsibility to conduct their activities in accordance with the Scotiabank Code of Conduct, and in a manner that minimizes reputational risk. The activities of the Legal; Global Tax; Corporate Secretary; Global Communications; Financial Crimes Risk Management; Global Compliance and Global Risk Management departments, as well as the Reputational Risk Committee, are particularly oriented to the management of reputational risk.

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 is ultimately responsible for oversight of strategic risk, by ensuring a robust strategic planning process and approving, on an annual basis, the strategic plan for the Bank. The Annual Strategy Report to the Board of Directors considers linkages between the Bank's Enterprise Risk Appetite Framework with the enterprise strategy, business line strategies and how the corporate functions support the Business Lines. The strategic planning process is managed by Enterprise Strategy.

The execution and evaluation of strategic plans is a fundamental element of the Risk Management Framework. On an ongoing basis, Heads of Business Lines and Control Functions identify, manage, and assess the internal and external risks that could impede achievement of, or progress of, strategic objectives. The executive management team regularly meets to evaluate the effectiveness of the Bank's strategic plan, and consider what amendments, if any, are required.

Controls and Accounting Policies

Controls and Procedures

Management's responsibility for financial information contained in this annual report is described on page 138.

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 Group Head and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

As of October 31, 2022, the Bank's management, with the participation of the President and Chief Executive Officer and the Group Head 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, 2022.

Changes in internal control over financial reporting

During the year ended October 31, 2022, 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.

Critical Accounting Policies and 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 particularly important to the presentation of the Bank's financial position and results of operations, as 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

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 after 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.

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 requires significant judgment that may impact the amount of allowance recognized.

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 historical default and loss experience, and 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, considering 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, consumer price index, central bank interest rates, and house-price indices, amongst others. The allowance is determined using four 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 three 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 incorporate judgment both in the determination of the scenarios' forecasts and the probability weights that are assigned to them.

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). 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 determine 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.

The 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 discloses the classification of all financial instruments carried at fair value in a hierarchy based on the determination of fair value. The best evidence of fair value for a financial instrument is the quoted price in an active market. Fair value based on unadjusted quoted market prices for identical instruments in active markets represents a Level 1 valuation. Quoted prices are not always available for over-the-counter (OTC) transactions, as well as transactions in inactive or illiquid markets. OTC transactions are valued using internal models that maximize the use of observable inputs to estimate fair value. The chosen valuation technique incorporates all the factors that market participants would consider in pricing a transaction. When fair value is based on all significant market observable inputs, the valuation is classified as Level 2. Financial instruments traded in a less active market can be valued using indicative market prices, the 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, significant management judgement is required for valuation methodologies and model inputs. 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 of 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 to ensure 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 of 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 be external to the Bank. At least annually, an independent assessment of pricing or rate sources is performed by GRM to determine the market presence or market representative levels.

Where quoted prices are not readily available, such as for transactions in over-the-counter markets, internal models that maximize the use of observable inputs are used to estimate fair value. An independent second-line model risk management function within GRM oversees the vetting, approval and ongoing validation of valuation models used in determining fair value. Model development and validation processes are governed by the Bank's Model Risk Management Policy.

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 can include adjustments for credit risk, bid-offer spreads, unobservable parameters, funding costs and constraints on prices in inactive or illiquid markets. The methodology for the calculation of valuation reserves is reviewed at least annually by senior management.

Valuation adjustments recorded against the fair value of financial assets and financial liabilities totaled $357 million as at October 31, 2022 (2021 – $212 million), net of any write-offs. The majority of the year-over-year change is due to widening of counterparty credit spreads during the year.

As at October 31, 2022, a net funding valuation adjustment (FVA) representing an excess of funding benefit adjustment over funding cost adjustment of $127 million (2021 – $139 million), pre-tax, was recorded for uncollateralized derivative instruments.

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 earnings), 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. 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.

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.

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. It is possible that additional liability and income tax expense could arise in the future, depending on the acceptance of the Bank's tax positions by the relevant tax authorities in the jurisdictions in which the Bank operates.

Note 27 of the 2022 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 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 on page 67.

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 2022, 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 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. At each reporting date, goodwill is reviewed to determine whether there is any indication of impairment. Each CGU to which goodwill is allocated for impairment testing 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, 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 and 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 described above as at July 31, 2022, and no impairment was determined to exist. Additionally, there were no impairment indicators noted as of October 31, 2022.

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. The 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 described above as at July 31, 2022, and no impairment was determined to exist. Additionally, there were no impairment indicators noted as of October 31, 2022.

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 must apply judgement in determining whether a modification of the terms of the financial asset is 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 must also 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.

Most 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, because 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.

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, considering 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 reporting period.

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 impact of adoption of new standards issued by the IASB on its consolidated financial statements and also evaluating the alternative elections available on transition.

Effective November 1, 2023

Insurance contracts

The International Accounting Standards Board issued IFRS 17 *Insurance Contracts* on May 18, 2017, to replace IFRS 4 *Insurance Contracts* and is effective for annual periods beginning on or after January 1, 2023. IFRS 17 provides a comprehensive principle-based framework for the recognition, measurement, presentation and disclosure of insurance contracts. The standard is to be applied on a full retrospective basis unless impractical, and then either the modified retrospective or fair value method may be used.

Under IFRS 17, groups of insurance contracts will be measured using current probability-weighted fulfillment cash flows and revenue recognized as the service is provided over the coverage period, based on the three measurement models as applicable: the general measurement model, the variable fee approach and the premium allocation approach.

For groups of contracts that are measured under the general measurement model and the variable fee approach, the contractual service margin will be recognized at initial recognition as a component of the carrying amount of the insurance contracts. Contractual service margin represents unearned profits to be recognized as coverage is provided in future. The premium allocation approach will be applied to short duration contracts and results in insurance revenue being recognized over the coverage period systematically. For all measurement models, if the group of contracts is expected to be onerous, the losses will be recognized immediately.

IFRS 17 will be effective for the Bank from November 1, 2023 and is being implemented as a multi-year project for the Bank's insurance and reinsurance entities. The project has an established governance structure led by the Executive Steering and Project Operations Committees assisted by a Project Management Office. The committees are comprised of representatives from Finance, Insurance Actuarial Services, Technology and the Insurance Business Operations. The Project involves technology implementation, policy and process changes to support the IFRS 17 processes. The Bank continues to assess and formulate the actuarial and accounting policies under IFRS 17 to quantify the impact of adopting the new standard, including quantification.

Regulatory Developments

The Bank continues to monitor and respond to global regulatory developments relating to a broad spectrum of topics, in order to ensure that control functions and business lines are responsive on a timely basis and business impacts, if any, are minimized. A high-level summary of some of the key regulatory developments that have the potential of impacting the Bank's operations is included in the Legal and compliance risk section of this MD&A and below, as may be updated by quarterly reports.

Regulatory Initiatives Impacting Financial Services in Canada

On September 22, 2021, Bill 64, Quebec's Act to Modernize Legislative Provisions respecting the Protection of Personal Information received royal assent. The first series of amendments came into force on September 22, 2022, and the remainder will come into force over the next two years. This law reforms Quebec Act Respecting the Protection of Personal Information in the Private Sector. It is modeled after the initial versions of the EU's General Data Protection Regulation, and introduced key changes, including increased enforcement powers for the Commission d'accès à l'information, significant new monetary penalties for non-compliance, risk assessments for data transfers outside Quebec, mandatory breach notification and record keeping, and itemized express consent requirements. The Bank has established a project under which it has engaged business stakeholders and key groups to consider the law's application.

On July 13, 2022, the Office of the Superintendent of Financial Institutions (OSFI) issued Guideline B-13 – Technology and Cyber Risk Management. B-13 applies to all federally regulated financial institutions (FRFIs), which includes the Bank, and establishes expectations with the aim to support FRFIs in developing greater resilience to technology and cyber risks. B-13 is organized into three domains, each of which sets out key components for sound risk management: Governance and Risk Management, Technology Operations and Resilience, and Cyber Security. B-13 will become effective on January 1, 2024. The Bank is currently assessing the impact of this Guideline.

On June 14, 2022, the House of Commons of Canada introduced Bill C-26, the Critical Cyber System Protection Act (CCSP) that will require, among other things, mandatory reporting of cyberattacks against systems of critical importance to Canadian interests. The legislative process regarding Bill C-26 is ongoing. The Bank continues to monitor developments under this Bill.

Bill 96 (Quebec) – Charter of the French language

On June 1, 2022, Bill 96, which provides for material amendments to the Charter of the French Language, received assent and officially became law. Some of the changes took effect immediately, while others will take effect at later dates. The new Charter provides for new administrative obligations for organizations and strengthens the recourses available to employees and members of the general public. The Office québécois de la langue française also has the power to impose much stricter penalties than were previously available. The stated objectives of Bill 96 are, in particular, to strengthen the presence and use of the French language in Quebec, to establish a new Charter of the French Language, and to affirm that the only official language of Quebec is French. The main areas impacted by the new law includes labour and employment matters, the language of contracts, consumer rights, public signage, judicial remedies, and penalties.

The Commodity Futures Trading Commission (CFTC) Position Limit

In October 2020, the CFTC approved final position limit rules for twenty-five commodity derivatives and their linked cash-settled futures, options on futures, and economically equivalent swaps. New position limits for futures and options on futures went into effect January 2022. In January 2023, position limits will also be in effect for economically equivalent swaps. The Bank is on track with the implementation of these rules.

Disclosure of Climate-Related Matters

On October 18, 2021, the Canadian Securities Administrators (CSA) published for comment Proposed National Instrument 51-107 – Disclosure of Climate Related Matters (the "Proposed Instrument") and its companion policy, which would introduce specific disclosure requirements regarding climate related matters for most public companies in Canada, including the Bank. The Proposed Instrument is largely consistent with the Task Force on Climate-related Financial Disclosure (the "TCFD Framework").

The disclosure requirements under the Proposed Instrument are focused on four areas: (i) governance; (ii) strategy; (iii) risk management; and (iv) metrics and targets. The governance and risk management disclosures are mandatory, while the strategy and metrics and targets disclosure would only be required to be disclosed if the information is material.

In addition, although the Proposed Instrument requires issuers to disclose Scope 1, 2 and 3 greenhouse gas emissions ("GHG") and the related risks, or provide an explanation regarding the reasons for not disclosing such information, the CSA noted that they are also considering an alternative approach, which would require mandatory disclosure of Scope 1 GHG emissions either when that information is material or in all cases, while taking a comply or explain approach to disclosure regarding Scope 2 and 3 GHG emissions.

The CSA specified December 31, 2022, as being the earliest date on which it expected the Proposed Instrument would come into effect.

Further, on October 12, 2022, the CSA published a news release, noting that that they are actively considering the impact of international developments on their proposed climate-related disclosure rule. In particular, the CSA highlighted the United States Securities and Exchange Commission (SEC) and the International Sustainability Standards Board (ISSB) proposals that were issued subsequent to their own proposed rule. The CSA continues to monitor the evolution of these proposals.

The CSA is currently revisiting letters it received on its 2021 proposal that included feedback on the two international proposals, as well as reviewing Canadian stakeholder feedback that was submitted directly to the SEC and ISSB.

The Bank continues to monitor developments in this area and was involved in the industry consultations regarding the Proposed Instrument, including by providing feedback on the CSA's proposals during the comment period.

Ontario Capital Markets Act

On October 12, 2021, the Government of Ontario published the draft Capital Markets Act (the "CMA"). The CMA, together with the Securities Commission Act (Ontario), if passed into law, is designed to provide the foundation for capital markets regulation and enforcement in Ontario.

The CMA is a response to the recommendations of the Capital Markets Modernization Taskforce contained in its January 22, 2021 final report. The CMA is proposing to adopt a "platform approach" to regulation. This approach establishes the fundamental provisions of capital markets law while leaving detailed requirements to be addressed in the rules, which provides regulatory flexibility and permits the OSC to respond to market developments and new financial products in a timely manner. The CMA, if enacted, will also replace the Securities Act (Ontario) and the Commodity Futures Act (Ontario). Commodity future contracts and commodity futures options will be regulated as derivatives under the CMA. The CMA also introduces changes that harmonize Ontario's regime with other Canadian jurisdictions.

The Bank continues to monitor developments regarding the draft legislation, and participated in the industry consultation on responding to the CMA proposals.

Interest Rate Benchmark Reform

Major interest rate benchmark reviews have been undertaken globally to either reform or phase out certain interbank offered rates (IBORs), including the Canadian Dollar Offered Rate (CDOR). As an alternative to IBORs, the regulators have recommended markets begin adopting alternative risk-free rates (RFRs). Further to previous announcements by various regulators, the publication of GBP, JPY, CHF, and EUR LIBORs ceased after December 31, 2021, while most of the USD LIBOR tenors (i.e., overnight, one-month, three-month, six-month and 12-month tenors) continue to be published until June 30, 2023.

The Federal Reserve Board and other US agencies have encouraged banks to transition away from USD LIBOR and cease entering into new contracts after December 31, 2021, to facilitate an orderly transition. Similarly, OSFI stated that Federally Regulated Financial Institutions (FRFIs) should not enter new transactions using USD LIBOR as a reference rate after December 31, 2021. The Bank's Transition Program continues to focus its efforts on the transition of products referencing USD LIBOR and ensuring the Bank is not building its exposure to USD LIBOR, except as permitted by the regulators.

On March 15, 2022, the U.S. Federal LIBOR legislation was signed into law establishing a framework for the replacement of USD LIBOR as the benchmark interest rate in existing contracts lacking effective fallback provisions that are difficult to amend before the cessation.

On May 16, 2022, Refinitiv Benchmark Services (UK) Limited (RBSL), the administrator of CDOR, announced the cessation of the publication of one-month, two-month, and three-month CDOR tenors after June 28, 2024, and this was authorized by the Ontario Securities Commission and the Autorité des marchés financiers. This announcement provides certainty regarding the future of one-month, two month, and three-month CDOR tenors and serves to set the fixed spread adjustment that will be used in industry standard fallback provisions for both derivative and cash products.

The Canadian Alternative Reference Rate (CARR) committee has published a detailed transition roadmap with milestones to guide market participants on the transition away from CDOR across all product types. The CARR also confirmed the intention to move forward with the development of forward-looking Term Canadian Overnight Repo Rate Average (CORRA) which is expected to become available in Q3 2023. OSFI has also set out expectations for FRFIs, with transactions linked to CDOR, to transition to new reference rates prior to the cessation date. The Bank's Transition Program has updated its project plans to align to the CDOR transition roadmap and milestones published by CARR and ensure alignment with OSFI's expectations for FRFIs.

2022 Proposed Canadian Federal Tax Measures

On August 9, 2022, the Department of Finance released draft legislative proposals relating to tax measures announced in the Federal Budget on April 7, 2022. These tax measures include the Canada Recovery Dividend ("CRD") under which the Bank will pay a one-time 15% tax on "taxable income" in excess of $1 billion, as well as an increase of 1.5% to the Bank's corporate income tax rate on its future taxable income above $100 million. The draft legislation provided more detail on the basis for the CRD, including that "taxable income" will be based on the average taxable income for the 2020 and 2021 taxation years. The CRD will be payable in equal amounts over five years.

On November 4, 2022, the Fall Economic Statement Implementation Act (Bill C-32) containing these measures was introduced into the legislature for the first reading. On November 22, 2022, Bill C-32 completed its second legislative reading.

The impact of these proposed tax measures has not been recognized in the Bank's financial results as at October 31, 2022 as they are not substantively enacted, which would only occur after the third legislative reading. Once substantively enacted, an income tax expense will be recognized in the Bank's Consolidated Statement of Income for the entire CRD obligation. The CRD payable is estimated at approximately $640 million.

Interim arrangements for the regulatory capital and liquidity treatment of cryptoasset exposures

In August 2022, OSFI issued an advisory, interim arrangements for the regulatory capital and liquidity treatment of cryptoasset exposures, which aims to ensure that banks apply a conservative treatment and set prudent limits in relation to their cryptoasset exposures. Through this interim arrangement, OSFI expects that banks adopt a cautious approach to using cryptoassets and remain vigilant regarding the risks involved. The requirements within the interim guidance are not material to the Bank.

The interim guidance is effective in the second quarter of 2023. The Bank has plans in place to meet the requirements by its effective date.

Assurance on capital, leverage and liquidity returns

In November 2022, OSFI issued a Guideline, Assurance on Capital, Leverage and Liquidity Returns Guideline for federally regulated deposit taking institutions. The guideline focuses on enhancing and aligning assurance expectations given the increasing complexity arising from the evolving regulatory reporting framework, particularly changes resulting from the Basel III reforms.

OSFI has broadened its expectations for external audits of key regulatory ratios including related controls and processes and has provided clarification on the factors to be considered in the determination of materiality. Areas of senior management attestation and internal audit opinion are also covered. The Guideline is effective for internal audits commencing 2023. Senior management attestation and review are effective quarterly, commencing fiscal 2024, and annual assurance expectations from external audits are required for the fiscal 2025 year-end reporting.

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.

T59 Compensation of the Bank key management personnel

For the year ended October 31 ($ millions)	2022	2021
Salaries and cash incentives(1)	**$ 24**	$ 21
Equity-based payment(2)	**36**	30
Pension and other benefits(1)	**4**	3
Total	**$ 64**	$ 54

(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.

T60 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)	2022	2021
Loans	**$ 11**	$ 11
Deposits	**$ 5**	$ 5

The Bank's committed credit exposure to companies controlled by directors totaled $264.0 million as at October 31, 2022 (October 31, 2021 – $252.8 million) while actual utilized accounts were $188.4 million (October 31, 2021 – $189.6 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:

T61 Transactions with associates and joint ventures

As at and for the year ended October 31 ($ millions)	2022	2021
Net income / (loss)	**$ (29)**	$ (85)
Loans	**205**	191
Deposits	**286**	229
Guarantees and commitments	**$ 96**	$ 154

Scotiabank principal pension plan

The Bank manages assets of $4.9 billion (October 31, 2021 – $4.7 billion) which is a portion of the Scotiabank principal pension plan assets and earned $6.4 million (October 31, 2021 – $6.6 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.

Supplementary Data

Geographic Information

T62 Net income by geographic segment

For the fiscal years ($ millions)	2022 Canada	U.S.	Mexico	Peru	Chile	Colombia	Caribbean and Central America	Other Inter-national	Total	2021 Canada	U.S.	Mexico	Peru	Chile	Colombia	Caribbean and Central America	Other Inter-national	Total
Net interest income	$ 9,827	$ 945	$ 1,736	$ 1,171	$ 1,604	$ 631	$ 1,436	$ 765	$ 18,115	$ 9,182	$ 742	$ 1,668	$ 1,186	$ 1,507	$ 692	$ 1,345	$ 639	$ 16,961
Non-interest income	8,149	1,103	748	422	538	388	719	1,234	13,301	9,190	953	714	531	666	383	664	1,190	14,291
Provision for credit losses	180	(13)	232	342	221	216	175	29	1,382	255	(33)	334	586	205	195	221	45	1,808
Non-interest expenses	9,928	1,040	1,223	628	870	682	1,335	1,396	17,102	9,627	915	1,202	662	943	682	1,343	1,244	16,618
Income tax expense	1,697	260	196	173	95	39	150	148	2,758	1,909	120	184	104	204	80	103	167	2,871
Net income	6,171	761	833	450	956	82	495	426	10,174	6,581	693	662	365	821	118	342	373	9,955
Net income attributable to non-controlling interests in subsidiaries	1	–	19	6	104	35	93	–	258	(10)	–	14	2	200	48	77	–	331
Net income attributable to equity holders of the Bank	$ 6,170	$ 761	$ 814	$ 444	$ 852	$ 47	$ 402	$ 426	$ 9,916	$ 6,591	$ 693	$ 648	$ 363	$ 621	$ 70	$ 265	$ 373	$ 9,624
Adjustments[1]	511	–	1	6	20	1	4	31	574	169	–	–	6	20	–	4	5	204
Adjusted net income (loss) attributable to equity holders of the Bank[1]	$ 6,681	$ 761	$ 815	$ 450	$ 872	$ 48	$ 406	$ 457	$ 10,490	$ 6,760	$ 693	$ 648	$ 369	$ 641	$ 70	$ 269	$ 378	$ 9,828

(1) Refer to Non-GAAP Measures starting on page 17.

T63 Loans and acceptances by geography

As at October 31 ($ billions)	2022	2021
Canada		
Atlantic provinces	$ 24.4	$ 21.6
Quebec	38.8	34.3
Ontario	277.5	246.9
Manitoba and Saskatchewan	22.2	19.6
Alberta	56.4	53.5
British Columbia	93.3	81.8
	512.6	457.7
U.S.	69.5	43.4
Mexico	40.1	31.7
Peru	22.5	19.4
Chile	51.3	45.0
Colombia	11.0	12.0
Other International		
Latin America	15.8	11.1
Europe	10.9	9.1
Caribbean and Central America	23.9	20.6
Asia and Other	12.2	13.0
	62.8	53.8
	$ 769.8	$ 663.0
Total allowance for credit losses	(5.3)	(5.7)
Total loans and acceptances net of allowance for credit losses	$ 764.5	$ 657.3

T64 Gross impaired loans by geographic segment

As at October 31 ($ millions)	2022	2021
Canada	$ 1,054	$ 1,090
U.S.	–	24
Mexico	1,020	758
Peru	761	699
Chile	740	512
Colombia	301	418
Other International	910	955
Total	$ 4,786	$ 4,456

T65 Provision against impaired financial instruments by geographic segment

For the fiscal years ($ millions)	2022	2021
Canada	**$ 548**	$ 705
U.S.	**12**	2
Mexico	**205**	450
Peru	**255**	1,061
Chile	**237**	181
Colombia	**227**	522
Other International	**210**	385
Total	**$ 1,694**	$ 3,306

T66 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	2022 Total	2021 Total
Asia								
China	$ 976	$ 718	$ 454	$ 1,042	$ 81	$ 27	**$ 3,298**	$ 4,308
India	873	11	–	–	–	7	**891**	1,536
Singapore	4,085	–	145	–	–	43	**4,273**	4,059
Hong Kong	1,449	82	30	41	–	9	**1,611**	1,540
Japan	283	98	7	4,529	–	74	**4,991**	4,765
Others(2)	480	21	65	–	133	10	**709**	1,009
Total	$ 8,146	$ 930	$ 701	$ 5,612	$ 214	$ 170	**$ 15,773**	$ 17,217
Latin America								
Chile	$ 3,323	$ 1,446	$ 3,694	$ 198	$ 6,142	$ 22	**$ 14,825**	$ 13,494
Mexico	6,625	166	–	627	5,970	35	**13,423**	10,147
Brazil	13,315	1,549	–	–	773	18	**15,655**	9,721
Peru	3,969	36	–	113	4,931	53	**9,102**	7,396
Colombia	2,644	341	–	233	904	3	**4,125**	4,686
Others(3)	123	7	–	–	478	–	**608**	577
Total	$ 29,999	$ 3,545	$ 3,694	$ 1,171	$ 19,198	$ 131	**$ 57,738**	$ 46,021
Caribbean and Central America								
Panama	$ 4,961	$ 199	$ 112	$ 148	$ 205	$ –	**$ 5,625**	$ 4,680
Costa Rica	1,051	46	–	–	1,137	5	**2,239**	2,139
Dominican Republic	1,244	119	–	–	907	–	**2,270**	1,899
Others(4)	881	93	–	–	1,473	1	**2,448**	2,350
Total	$ 8,137	$ 457	$ 112	$ 148	$ 3,722	$ 6	**$ 12,582**	$ 11,068
As at October 31, 2022	**$ 46,282**	**$ 4,932**	**$ 4,507**	**$ 6,931**	**$ 23,134**	**$ 307**	**$ 86,093**	
As at October 31, 2021	$ 37,726	$ 5,794	$ 3,445	$ 6,509	$ 19,706	$ 1,126	$ 74,306	

(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, Malaysia, South Korea, Thailand and Taiwan.
(3) Includes Venezuela and Uruguay.
(4) Includes other Caribbean countries, such as Bahamas, Barbados, Jamaica, Trinidad & Tobago, and Turks & Caicos.

Credit Risk

T67 Loans and acceptances by type of borrower

As at October 31 ($ billions)	2022	2021
Residential mortgages	$ 349.3	$ 319.7
Personal loans	99.4	91.5
Credit cards	14.5	12.5
Personal	$ 463.2	$ 423.7
Financial services		
Non-bank	$ 35.2	$ 29.4
Bank(1)	4.2	4.4
Wholesale and retail	34.3	26.8
Real estate and construction	60.9	44.8
Energy	9.2	10.0
Transportation	9.3	9.3
Automotive	14.6	10.3
Agriculture	19.8	15.8
Hospitality and leisure	4.0	4.1
Mining	6.2	4.3
Metals	2.8	2.4
Utilities	27.1	18.9
Health care	7.2	5.5
Technology and media	25.3	15.9
Chemicals	2.4	1.5
Food and beverage	11.8	9.8
Forest products	2.5	2.0
Other(2)	23.6	18.7
Sovereign(3)	6.2	5.4
Business and government	$ 306.6	$ 239.3
	$ 769.8	$ 663.0
Total allowance for credit losses	(5.3)	(5.7)
Total loans and acceptances net of allowance for credit losses	$ 764.5	$ 657.3

(1) Deposit taking institutions and securities firms.
(2) Other includes $6.4 billion in wealth management, $2.5 billion in services and $1.0 billion in financing products (2021 – $6.3, $2.6, and $1.3 respectively).
(3) Includes central banks, regional and local governments, supra-national agencies.

T68 Off-balance sheet credit instruments

As at October 31 ($ billions)	2022	2021
Commitments to extend credit (1)	$ 267.7	$ 239.8
Standby letters of credit and letters of guarantee	42.0	37.3
Securities lending, securities purchase commitments and other	54.5	61.8
Total	$ 364.2	$ 338.9

(1) Excludes commitments which are unconditionally cancellable at the Bank's discretion at any time.

T69 Changes in net impaired loans

For the fiscal years ($ millions)	2022	2021
Gross impaired loans		
Balance at beginning of year	**$ 4,456**	$ 5,053
Net additions		
New additions	**5,277**	6,646
Acquisition-related	**–**	–
Declassifications	**(1,353)**	(1,458)
Payments	**(1,445)**	(1,450)
Sales	**(53)**	(31)
	2,426	3,707
Write-offs		
Residential mortgages	**(73)**	(111)
Personal loans	**(1,116)**	(1,833)
Credit cards	**(791)**	(1,543)
Business and government	**(318)**	(414)
	(2,298)	(3,901)
Foreign exchange and other	**202**	(403)
Balance at end of year	**$ 4,786**	$ 4,456
Allowance for credit losses on financial instruments		
Balance at beginning of year	**$ 1,655**	$ 1,957
Provision for credit losses	**1,678**	3,306
Write-offs	**(2,298)**	(3,901)
Recoveries		
Residential mortgages	**28**	27
Personal loans	**253**	274
Credit cards	**179**	203
Business and government	**112**	39
	572	543
Foreign exchange and other	**28**	(250)
Balance at end of year	**$ 1,635**	$ 1,655
Net impaired loans		
Balance at beginning of year	**$ 2,801**	$ 3,096
Net change in gross impaired loans	**330**	(597)
Net change in allowance for credit losses on impaired financial instruments	**20**	302
Balance at end of year	**$ 3,151**	$ 2,801

T70 Provision for credit losses

For the fiscal years ($ millions)	2022	2021
New provisions	**$ 2,361**	$ 3,912
Reversals	**(95)**	(63)
Recoveries	**(572)**	(543)
Provision for credit losses on impaired financial instruments	**1,694**	3,306
Provision for credit losses – performing financial instruments	**(312)**	(1,498)
Total Provision for credit losses	**$ 1,382**	$ 1,808

T71 Provision for credit losses against impaired financial instruments by type of borrower

For the fiscal years ($ millions)	2022	2021
Residential mortgages	**$ 49**	$ 117
Personal loans	**766**	1,429
Credit cards	**601**	1,361
Personal	**1,416**	2,907
Financial services		
Non-bank	**20**	2
Bank	**–**	–
Wholesale and retail	**22**	126
Real estate and construction	**84**	51
Energy	**(29)**	15
Transportation	**23**	25
Automotive	**(3)**	1
Agriculture	**37**	24
Hospitality and leisure	**13**	7
Mining	**12**	–
Metals	**(6)**	31
Utilities	**34**	6
Health care	**7**	10
Technology and media	**15**	17
Chemicals	**10**	1
Food and beverage	**13**	19
Forest products	**14**	28
Other	**8**	35
Sovereign	**4**	1
Business and government	**278**	399
Provision for credit losses on impaired financial instruments	**$ 1,694**	$ 3,306

T72 Impaired loans by type of borrower

	2022			2021		
As at October 31 ($ millions)	**Gross**	**Allowance for credit losses**	**Net**	Gross	Allowance for credit losses	Net
Residential mortgages	**$ 1,386**	**$ 406**	**$ 980**	$ 1,331	$ 374	$ 957
Personal loans	**848**	**551**	**297**	833	626	207
Credit cards	**–**	**–**	**–**	–	–	–
Personal	**$ 2,234**	**$ 957**	**$ 1,277**	$ 2,164	$ 1,000	$ 1,164
Financial services						
Non-bank	**142**	**22**	**120**	34	6	28
Bank	**1**	**–**	**1**	2	2	–
Wholesale and retail	**484**	**215**	**269**	473	209	264
Real estate and construction	**491**	**98**	**393**	339	67	272
Energy	**59**	**12**	**47**	86	18	68
Transportation	**89**	**38**	**51**	79	21	58
Automotive	**18**	**9**	**9**	36	20	16
Agriculture	**196**	**72**	**124**	207	72	135
Hospitality and leisure	**87**	**15**	**72**	85	7	78
Mining	**39**	**9**	**30**	21	2	19
Metals	**70**	**17**	**53**	96	35	61
Utilities	**93**	**9**	**84**	129	4	125
Health care	**53**	**26**	**27**	68	25	43
Technology and media	**37**	**13**	**24**	58	20	38
Chemicals	**88**	**12**	**76**	6	3	3
Food and beverage	**97**	**30**	**67**	91	34	57
Forest products	**79**	**13**	**66**	94	25	69
Other	**182**	**63**	**119**	166	81	85
Sovereign	**247**	**5**	**242**	222	4	218
Business and government	**$ 2,552**	**$ 678**	**$ 1,874**	$ 2,292	$ 655	$ 1,637
Total	**$ 4,786**	**$ 1,635**	**$ 3,151**	$ 4,456	$ 1,655	$ 2,801

T73 Total credit risk exposures by geography (1)(2)

As at October 31 ($ millions)	2022 Drawn	2022 Undrawn	2022 Other exposures(3)	2022 Retail	2022 Total	2021 Total
	Non-Retail					
Canada	$ 156,406	$ 61,842	$ 40,971	$ 450,830	$ 710,049	$ 639,748
U.S.	146,109	50,517	51,046	–	247,672	194,424
Chile	26,836	1,326	4,968	27,398	60,528	54,777
Mexico	30,353	1,522	3,283	15,635	50,793	38,422
Peru	17,768	1,126	3,240	10,042	32,176	28,152
Colombia	6,457	384	956	5,494	13,291	14,446
Other International						
Europe	21,158	7,459	17,539	–	46,156	47,179
Caribbean and Central America	16,869	1,475	1,088	12,625	32,057	27,673
Latin America (other)	16,810	1,336	1,905	839	20,890	14,080
Other	23,387	5,208	5,475	18	34,088	35,104
Total	$ 462,153	$ 132,195	$ 130,471	$ 522,881	$ 1,247,700	$ 1,094,005
As at October 31, 2021	$ 385,912	$ 117,213	$ 119,923	$ 470,957	$ 1,094,005	

(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.

T74 AIRB credit risk exposures by maturity (1)(2)

Residual maturity as at October 31 ($ millions)	2022 Drawn	2022 Undrawn	2022 Other exposures(3)	2022 Total	2021 Total
Non-retail					
Less than 1 year	$ 192,745	$ 40,213	$ 82,363	$ 315,321	$ 290,050
One to 5 years	175,369	83,342	32,514	291,225	230,974
Over 5 years	32,765	5,701	7,170	45,636	26,540
Total non-retail	$ 400,879	$ 129,256	$ 122,047	$ 652,182	$ 547,564
Retail					
Less than 1 year	$ 29,398	$ 26,649	$ –	$ 56,047	$ 49,980
One to 5 years	267,711	–	–	267,711	249,195
Over 5 years	16,917	–	–	16,917	16,230
Revolving credits(4)	40,646	30,417	–	71,063	64,490
Total retail	$ 354,672	$ 57,066	$ –	$ 411,738	$ 379,895
Total	$ 755,551	$ 186,322	$ 122,047	$ 1,063,920	$ 927,459
As at October 31, 2021	$ 650,553	$ 164,743	$ 112,163	$ 927,459	

(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.

T75 Total credit risk exposures and risk-weighted assets

As at October 31 ($ millions)	2022 AIRB Exposure at Default[3]	2022 AIRB Risk-weighted assets	2022 Standardized[1][2] Exposure at Default[3]	2022 Standardized[1][2] Risk-weighted assets	2022 Total Exposure at Default[3]	2022 Total Risk-weighted assets	2021 Total Exposure at Default[3]	2021 Total Risk-weighted assets
Non-retail								
Corporate								
Drawn	$ 232,256	$ 94,564	$ 48,804	$ 45,921	$ 281,060	$ 140,485	$ 224,042	$ 128,055
Undrawn	123,347	42,942	2,879	2,877	126,226	45,819	111,775	42,781
Other[4]	60,522	12,910	2,716	2,705	63,238	15,615	62,337	14,905
	416,125	150,416	54,399	51,503	470,524	201,919	398,154	185,741
Bank								
Drawn	16,812	3,039	3,752	3,011	20,564	6,050	18,785	5,260
Undrawn	4,739	1,153	26	26	4,765	1,179	4,677	1,041
Other[4]	8,404	951	7	7	8,411	958	8,495	925
	29,955	5,143	3,785	3,044	33,740	8,187	31,957	7,226
Sovereign								
Drawn	151,811	4,203	8,718	608	160,529	4,811	143,085	4,665
Undrawn	1,170	66	34	35	1,204	101	761	72
Other[4]	3,561	135	213	213	3,774	348	1,178	53
	156,542	4,404	8,965	856	165,507	5,260	145,024	4,790
Total Non-retail								
Drawn	400,879	101,806	61,274	49,540	462,153	151,346	385,912	137,980
Undrawn	129,256	44,161	2,939	2,938	132,195	47,099	117,213	43,894
Other[4]	72,487	13,996	2,936	2,925	75,423	16,921	72,010	15,883
	$ 602,622	$ 159,963	$ 67,149	$ 55,403	$ 669,771	$ 215,366	$ 575,135	$ 197,757
Retail								
Retail residential mortgages								
Drawn	$ 283,079	$ 22,766	$ 63,054	$ 25,499	$ 346,133	$ 48,265	$ 316,272	$ 40,572
	283,079	22,766	63,054	25,499	346,133	48,265	316,272	40,572
Secured lines of credit								
Drawn	21,879	3,278	–	–	21,879	3,278	20,278	2,938
Undrawn	22,435	879	–	–	22,435	879	19,984	897
	44,314	4,157	–	–	44,314	4,157	40,262	3,835
Qualifying retail revolving exposures								
Drawn	16,018	9,166	–	–	16,018	9,166	14,415	7,958
Undrawn	30,417	3,247	–	–	30,417	3,247	27,356	3,111
	46,435	12,413	–	–	46,435	12,413	41,771	11,069
Other retail								
Drawn	33,696	19,726	47,242	34,820	80,938	54,546	68,972	44,186
Undrawn/Other	4,214	1,958	847	636	5,061	2,594	3,680	1,706
	37,910	21,684	48,089	35,456	85,999	57,140	72,652	45,892
Total retail								
Drawn	354,672	54,936	110,296	60,319	464,968	115,255	419,937	95,654
Undrawn/Other	57,066	6,084	847	636	57,913	6,720	51,020	5,714
	$ 411,738	$ 61,020	$ 111,143	$ 60,955	$ 522,881	$ 121,975	$ 470,957	$ 101,368
Securitization exposures	23,302	4,043	4,233	1,366	27,535	5,409	20,965	4,353
Trading derivatives	26,258	4,645	1,255	1,246	27,513	5,891	26,948	6,671
CVA derivatives	–	6,422	–	–	–	6,422	–	3,957
Subtotal	$ 1,063,920	$ 236,093	$ 183,780	$ 118,970	$ 1,247,700	$ 355,063	$ 1,094,005	$ 314,106
Equities	5,292	5,209	–	–	5,292	5,209	4,563	4,436
Other assets[5]	–	–	81,111	27,312	81,111	27,312	61,737	28,054
Total credit risk, before scaling factor	$ 1,069,212	$ 241,302	$ 264,891	$ 146,282	$ 1,334,103	$ 387,584	$ 1,160,305	$ 346,596
Add-on for 6% scaling factor[6]	–	13,850	–	–	–	13,850	–	12,186
Total credit risk	$ 1,069,212	$ 255,152	$ 264,891	$ 146,282	$ 1,334,103	$ 401,434	$ 1,160,305	$ 358,782

(1) Portfolios under the Standardized Approach are reported net of specific allowances for credit losses and net of collateral amounts treated under the Comprehensive Approach.
(2) During the year, certain small business loans were reclassified from non-retail to retail based on regulatory definitions. Prior period has not been restated.
(3) Outstanding amount for on-balance sheet exposures and loan equivalent amount foroff-balance sheet exposures, before credit risk mitigation.
(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) Other assets include 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

T76 Volume/rate analysis of change in net interest income

($ millions)	Increase (decrease) due to change in: 2022 versus 2021			Increase (decrease) due to change in: 2021 versus 2020		
	Average volume	**Average rate**	**Net change**	Average volume	Average rate	Net change
Net interest income						
Total earning assets	**$ 2,607**	**$ 5,965**	**$ 8,572**	$ (545)	$ (4,181)	$ (4,726)
Total interest-bearing liabilities	**902**	**6,516**	**7,418**	284	(4,651)	(4,367)
Change in net interest income	**$ 1,705**	**$ (551)**	**$ 1,154**	$ (829)	$ 470	$ (359)
Assets						
Deposits with banks	**$ 15**	**$ 635**	**$ 650**	$ 60	$ (292)	$ (232)
Trading assets	**(9)**	**490**	**481**	53	(201)	(148)
Securities purchased under resale agreements	**33**	**248**	**281**	(19)	(89)	(108)
Investment securities	**64**	**865**	**929**	(193)	(227)	(420)
Loans:						
Residential mortgages	**1,173**	**663**	**1,836**	886	(796)	90
Personal loans	**195**	**490**	**685**	(266)	(730)	(996)
Credit cards	**55**	**(50)**	**5**	(602)	(292)	(894)
Business and government	**1,081**	**2,624**	**3,705**	(464)	(1,554)	(2,018)
Total loans	**2,504**	**3,727**	**6,231**	(446)	(3,372)	(3,818)
Total earning assets	**$ 2,607**	**$ 5,965**	**$ 8,572**	$ (545)	$ (4,181)	$ (4,726)
Liabilities						
Deposits:						
Personal	**$ 61**	**$ 953**	**$ 1,014**	$ 194	$ (1,419)	$ (1,225)
Business and government	**705**	**4,472**	**5,177**	34	(2,798)	(2,764)
Banks	**53**	**85**	**138**	(38)	(239)	(277)
Total deposits	**819**	**5,510**	**6,329**	190	(4,456)	(4,266)
Obligations related to securities sold under repurchase agreements	**1**	**166**	**167**	(32)	(65)	(97)
Subordinated debentures	**33**	**57**	**90**	(24)	(36)	(60)
Other interest-bearing liabilities	**49**	**783**	**832**	150	(94)	56
Total interest-bearing liabilities	**$ 902**	**$ 6,516**	**$ 7,418**	$ 284	$ (4,651)	$ (4,367)

T77 Provision for income and other taxes

For the fiscal years ($ millions)	**2022**	2021	**2022 versus 2021**
Income taxes			
Income tax expense	**$ 2,758**	$ 2,871	**(3.9)%**
Other taxes			
Payroll taxes	**458**	407	**12.5**
Business and capital taxes	**541**	511	**5.9**
Harmonized sales tax and other	**479**	404	**18.6**
Total other taxes	**1,478**	1,322	**11.8**
Total income and other taxes (1)	**$ 4,236**	$ 4,193	**1.0%**
Net income before income taxes	**$ 12,932**	$ 12,826	**0.8%**
Effective income tax rate (%) (2)	**21.3**	22.4	**(1.1)**
Total tax rate (%) (3)	**29.4**	29.6	**(0.2)**

(1) Comprising $2,782 of Canadian taxes (2021 – $2,754) and $1,454 of foreign taxes (2021 – $1,439).
(2) Refer to Glossary on page 133 for the description of the measure.
(3) Total income and other taxes as a percentage of net income before income and other taxes.

T78 Assets under administration and management (1)

($ billions)	2022	2021
Assets under administration		
Personal		
Retail brokerage	**$ 192.4**	$ 201.0
Investment management and trust	**162.7**	144.7
	355.1	345.7
Mutual funds	**198.8**	225.2
Institutional	**87.7**	82.0
Total	**$ 641.6**	$ 652.9
Assets under management		
Personal	**$ 76.7**	$ 76.3
Mutual funds	**184.1**	206.9
Institutional	**50.3**	62.6
Total	**$ 311.1**	$ 345.8

(1) Refer to Glossary on page 133 for the description of the measure.

T79 Changes in assets under administration and management (1)

As at October 31 ($ billions)	2022	2021
Assets under administration		
Balance at beginning of year	**$ 652.9**	$ 556.9
Net inflows (outflows)	**20.0**	31.0
Impact of market changes, including foreign currency translation	**(31.3)**	65.0
Balance at end of year	**$ 641.6**	$ 652.9

(1) Refer to Glossary on page 133 for the description of the measure.

As at October 31 ($ billions)	2022	2021
Assets under management		
Balance at beginning of year	**$ 345.8**	$ 289.8
Net inflows (outflows)	**(4.3)**	9.5
Impact of market changes, including foreign currency translation	**(30.4)**	46.5
Balance at end of year	**$ 311.1**	$ 345.8

T80 Fees paid to the shareholders' auditors

For the fiscal years ($ millions)	2022	2021
Audit services	**$ 31.6**	$ 25.9
Audit-related services	**2.6**	2.1
Tax services outside of the audit scope	**–**	–
Other non-audit services	**0.4**	0.4
Total	**$ 34.6**	$ 28.4

Selected Quarterly Information

T81 Selected quarterly information

	2022				2021			
As at and for the quarter ended	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1
Operating results ($ millions)								
Net interest income	**4,622**	**4,676**	**4,473**	**4,344**	4,217	4,217	4,176	4,351
Non-interest income	**3,004**	**3,123**	**3,469**	**3,705**	3,470	3,540	3,560	3,721
Total revenue	**7,626**	**7,799**	**7,942**	**8,049**	7,687	7,757	7,736	8,072
Provision for credit losses	**529**	**412**	**219**	**222**	168	380	496	764
Non-interest expenses	**4,529**	**4,191**	**4,159**	**4,223**	4,271	4,097	4,042	4,208
Income tax expense	**475**	**602**	**817**	**864**	689	738	742	702
Net income	**2,093**	**2,594**	**2,747**	**2,740**	2,559	2,542	2,456	2,398
Net income attributable to common shareholders	**1,949**	**2,504**	**2,595**	**2,608**	2,411	2,426	2,289	2,265
Operating performance								
Basic earnings per share ($)	**1.64**	**2.10**	**2.16**	**2.15**	1.98	2.00	1.89	1.87
Diluted earnings per share ($)	**1.63**	**2.09**	**2.16**	**2.14**	1.97	1.99	1.88	1.86
Return on equity (%) (1)	**11.9**	**15.3**	**16.2**	**15.8**	14.8	15.0	14.8	14.2
Return on tangible common equity (%) (2)	**15.0**	**19.2**	**20.4**	**19.9**	18.7	19.1	18.9	18.3
Productivity ratio (%)(1)	**59.4**	**53.7**	**52.4**	**52.5**	55.6	52.8	52.2	52.1
Net interest margin (%)(2)	**2.18**	**2.22**	**2.23**	**2.16**	2.17	2.23	2.26	2.27
Financial position information ($ billions)								
Cash and deposits with financial institutions	**65.9**	**67.7**	**85.9**	**99.1**	86.3	75.9	52.0	89.5
Trading assets	**113.2**	**118.6**	**133.6**	**152.9**	146.3	141.1	144.2	141.8
Loans	**745.0**	**713.4**	**689.7**	**667.3**	637.0	627.7	608.2	603.6
Total assets	**1,349.4**	**1,292.1**	**1,288.5**	**1,245.5**	1,184.8	1,163.4	1,125.2	1,164.1
Deposits	**916.2**	**879.6**	**876.6**	**851.0**	797.3	794.4	756.7	769.0
Common equity	**65.1**	**65.0**	**64.8**	**66.2**	64.8	64.7	63.5	63.4
Preferred shares and other equity instruments	**8.1**	**7.1**	**5.6**	**5.6**	6.0	5.3	4.5	5.3
Assets under administration (1)	**641.6**	**630.1**	**640.2**	**651.2**	652.9	636.4	622.8	598.1
Assets under management(1)	**311.1**	**319.6**	**326.2**	**345.3**	345.8	340.8	328.7	311.7
Capital and liquidity measures								
Common Equity Tier 1 (CET1) capital ratio (%)	**11.5**	**11.4**	**11.6**	**12.0**	12.3	12.2	12.3	12.2
Tier 1 capital ratio (%)	**13.2**	**13.0**	**12.8**	**13.4**	13.9	13.7	13.6	13.6
Total capital ratio (%)	**15.3**	**15.0**	**15.0**	**15.1**	15.9	15.7	15.7	15.7
Total loss absorbing capacity (TLAC) ratio (%)	**27.4**	**28.4**	**30.1**	**28.3**	27.8	25.3	24.2	23.3
Leverage ratio (%)	**4.2**	**4.2**	**4.2**	**4.4**	4.8	4.8	4.7	4.7
TLAC Leverage ratio (%)	**8.8**	**9.3**	**9.8**	**9.4**	9.6	8.8	8.3	8.0
Risk-weighted assets ($ billions)	**462.4**	**452.8**	**445.3**	**433.7**	416.1	414.2	404.7	406.8
Liquidity coverage ratio (LCR) (%)	**119**	**122**	**125**	**123**	124	123	129	129
Net stable funding ratio (NSFR) (%)	**111**	**109**	**109**	**108**	110	112	112	115
Credit quality								
Net impaired loans ($ millions)	**3,151**	**2,695**	**2,660**	**2,812**	2,801	2,976	3,178	3,285
Allowance for credit losses ($ millions) (3)	**5,499**	**5,295**	**5,375**	**5,583**	5,731	6,232	6,893	7,810
Gross impaired loans as a % of loans and acceptances (1)	**0.62**	**0.58**	**0.60**	**0.64**	0.67	0.73	0.81	0.84
Net impaired loans as a % of loans and acceptances (1)	**0.41**	**0.36**	**0.37**	**0.41**	0.42	0.46	0.50	0.52
Provision for credit losses as a % of average net loans and acceptances (annualized)(1)(4)	**0.28**	**0.22**	**0.13**	**0.13**	0.10	0.24	0.33	0.49
Provision for credit losses on impaired loans as a % of average net loans and acceptances (annualized)(1)(4)	**0.26**	**0.21**	**0.24**	**0.24**	0.31	0.53	0.80	0.49
Net write-offs as a % of average net loans and acceptances (annualized) (1)	**0.24**	**0.21**	**0.25**	**0.27**	0.34	0.62	0.76	0.43
Adjusted results(2)								
Adjusted net income ($ millions)	**2,615**	**2,611**	**2,765**	**2,758**	2,716	2,560	2,475	2,418
Adjusted diluted earnings per share ($)	**2.06**	**2.10**	**2.18**	**2.15**	2.10	2.01	1.90	1.88
Adjusted return on equity (%)	**15.0**	**15.4**	**16.4**	**15.9**	15.6	15.1	14.9	14.4
Adjusted return on tangible common equity (%)	**18.7**	**19.2**	**20.4**	**19.8**	19.6	19.1	18.9	18.3
Adjusted productivity ratio (%)	**53.7**	**53.4**	**52.1**	**52.2**	52.8	52.5	51.9	51.8
Common share information								
Closing share price ($) (TSX)	**65.85**	**78.01**	**81.35**	**91.56**	81.14	77.87	78.27	68.20
Shares outstanding (millions)								
Average – Basic	**1,192**	**1,195**	**1,199**	**1,211**	1,215	1,215	1,213	1,212
Average – Diluted	**1,199**	**1,203**	**1,201**	**1,230**	1,224	1,223	1,223	1,237
End of period	**1,191**	**1,193**	**1,198**	**1,204**	1,215	1,215	1,214	1,212
Dividends paid per share ($)	**1.03**	**1.03**	**1.00**	**1.00**	0.90	0.90	0.90	0.90
Dividend yield (%)(1)	**5.7**	**5.2**	**4.5**	**4.6**	4.5	4.5	4.9	5.7
Market capitalization ($ billions) (TSX)	**78.5**	**93.1**	**97.4**	**110.3**	98.6	94.6	95.0	82.7
Book value per common share ($) (1)	**54.68**	**54.52**	**54.13**	**54.94**	53.28	53.26	52.29	52.28
Market value to book value multiple (1)	**1.2**	**1.4**	**1.5**	**1.7**	1.5	1.5	1.5	1.3
Price to earnings multiple (trailing 4 quarters) (1)	**8.2**	**9.3**	**9.8**	**11.4**	10.5	10.8	12.4	12.5

(1) Refer to Glossary on page 133 for the description of the measure.
(2) Refer to page 17 for a discussion of non-GAAP measures.
(3) Includes allowance for credit losses on all financial assets – loans, acceptances, off-balance sheet exposures, debt securities, and deposits with financial institutions.
(4) Includes provision for credit losses on certain financial assets – loans, acceptances and off-balance sheet exposures.

Selected Annual Information

T82 Selected annual information

($ millions)	2022	2021	2020
Total revenue	**$ 31,416**	$ 31,252	$ 31,336
Net income attributable to:			
Equity holders of the Bank	**9,916**	9,624	6,778
Non-controlling interests in subsidiaries	**258**	331	75
	$ 10,174	$ 9,955	$ 6,853
Basic earnings per share (in dollars)	**$ 8.05**	$ 7.74	$ 5.43
Diluted earnings per share (in dollars)	**8.02**	7.70	5.30
Dividend paid per common share (in dollars)	**4.06**	3.60	3.60
Total assets	**1,349,418**	1,184,844	1,136,466
Deposits	**916,181**	797,259	750,838

Ten-Year Statistical Review

T83 Condensed Consolidated Statement of Financial Position

As at October 31 ($ millions)	2022(1)	2021(1)	2020(1)	2019(1)	2018(1)	2017	2016	2015	2014	2013
Assets										
Cash, deposits with financial institutions and Precious metals	**$ 66,438**	$ 87,078	$ 77,641	$ 50,429	$ 65,460	$ 65,380	$ 54,786	$ 84,477	$ 64,016	$ 62,218
Trading assets	**113,154**	146,312	117,839	127,488	100,262	98,464	108,561	99,140	113,248	96,489
Securities purchased under resale agreements and securities borrowed	**175,313**	127,739	119,747	131,178	104,018	95,319	92,129	87,312	93,866	82,533
Investment securities	**110,008**	75,199	111,389	82,359	78,396	69,269	72,919	43,216	38,662	34,319
Loans, net of allowance	**744,987**	636,986	603,263	592,483	551,834	504,369	480,164	458,628	424,309	402,215
Other(2)	**139,518**	111,530	106,587	102,224	98,523	82,472	87,707	83,724	71,565	65,870
	$ 1,349,418	$ 1,184,844	$ 1,136,466	$ 1,086,161	$ 998,493	$ 915,273	$ 896,266	$ 856,497	$ 805,666	$ 743,644
Liabilities										
Deposits	**$ 916,181**	$ 797,259	$ 750,838	$ 733,390	$ 676,534	$ 625,367	$ 611,877	$ 600,919	$ 554,017	$ 517,887
Obligations related to securities sold under repurchase agreements and securities lent	**139,025**	123,469	137,763	124,083	101,257	95,843	97,083	77,015	88,953	77,508
Subordinated debentures	**8,469**	6,334	7,405	7,252	5,698	5,935	7,633	6,182	4,871	5,841
Other(2)	**210,994**	184,890	169,957	151,244	147,324	126,503	121,852	118,902	108,614	97,021
	1,274,669	1,111,952	1,065,963	1,015,969	930,813	853,648	838,445	803,018	756,455	698,257
Common equity	**65,150**	64,750	62,819	63,638	61,044	55,454	52,657	49,085	44,965	40,165
Preferred shares and other equity instruments	**8,075**	6,052	5,308	3,884	4,184	4,579	3,594	2,934	2,934	4,084
Non-controlling interests in subsidiaries	**1,524**	2,090	2,376	2,670	2,452	1,592	1,570	1,460	1,312	1,138
Total equity	**74,749**	72,892	70,503	70,192	67,680	61,625	57,821	53,479	49,211	45,387
	$ 1,349,418	$ 1,184,844	$ 1,136,466	$ 1,086,161	$ 998,493	$ 915,273	$ 896,266	$ 856,497	$ 805,666	$ 743,644

(1) The amounts for the years ended October 31, 2018 to October 31, 2022 have been prepared in accordance with IFRS 9; prior period amounts have not been restated.
(2) The amounts for the years ended October 31, 2020 to October 31, 2022 have been prepared in accordance with IFRS 16; prior year amounts have not been restated.

T84 Condensed Consolidated Statement of Income

For the year ended October 31 ($ millions)	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Revenue										
Net interest income(1)(2)	**$ 18,115**	$ 16,961	$ 17,320	$ 17,177	$ 16,191	$ 15,035	$ 14,292	$ 13,092	$ 12,305	$ 11,350
Non-interest income(1)(3)	**13,301**	14,291	14,016	13,857	12,584	12,120	12,058	10,957	11,299	9,949
Total revenue	**31,416**	31,252	31,336	31,034	28,775	27,155	26,350	24,049	23,604	21,299
Provision for credit losses(1)	**1,382**	1,808	6,084	3,027	2,611	2,249	2,412	1,942	1,703	1,288
Non-interest expenses(2)(3)	**17,102**	16,618	16,856	16,737	15,058	14,630	14,540	13,041	12,601	11,664
Income before taxes	**12,932**	12,826	8,396	11,270	11,106	10,276	9,398	9,066	9,300	8,347
Income tax expense	**2,758**	2,871	1,543	2,472	2,382	2,033	2,030	1,853	2,002	1,737
Net income	**$ 10,174**	$ 9,955	$ 6,853	$ 8,798	$ 8,724	$ 8,243	$ 7,368	$ 7,213	$ 7,298	$ 6,610
Net income attributable to non-controlling interests in subsidiaries	**258**	331	75	408	176	238	251	199	227	231
Net income attributable to equity holders of the Bank	**$ 9,916**	$ 9,624	$ 6,778	$ 8,390	$ 8,548	$ 8,005	$ 7,117	$ 7,014	$ 7,071	$ 6,379
Preferred shareholders and other equity instrument holders	**260**	233	196	182	187	129	130	117	155	217
Common shareholders	**$ 9,656**	$ 9,391	$ 6,582	$ 8,208	$ 8,361	$ 7,876	$ 6,987	$ 6,897	$ 6,916	$ 6,162

(1) The amounts for the years ended October 31, 2018 to October 31, 2022 have been prepared in accordance with IFRS 9; prior year amounts have not been restated.
(2) The amounts for the years ended October 31, 2020 to October 31, 2022 have been prepared in accordance with IFRS 16; prior year amounts have not been restated.
(3) The amounts for the years ended October 31, 2019 to October 31, 2022 have been prepared in accordance with IFRS 15; prior year amounts have not been restated.

T85 Consolidated Statement of Changes in Equity

For the year ended October 31 ($ millions)	2022	2021	2020	2019	2018	2017	2016
Common shares							
Balance at beginning of year	**$ 18,507**	$ 18,239	$ 18,264	$ 18,234	$ 15,644	$ 15,513	$ 15,141
Issued	**706**	268	59	255	2,708	313	391
Purchased for cancellation	**(506)**	–	(84)	(225)	(118)	(182)	(19)
Balance at end of year	**$ 18,707**	$ 18,507	$ 18,239	$ 18,264	$ 18,234	$ 15,644	$ 15,513
Retained earnings							
Balance at beginning of year	**51,354**	46,345	44,439	41,414	38,117	34,752	31,316
IFRS adjustment	**–**	–	–	(58)	(564)	–	–
Restated balances	**51,354**	46,345	44,439	41,356	37,553	34,752	31,316
Net income attributable to common shareholders of the Bank	**9,656**	9,391	6,582	8,208	8,361	7,876	6,987
Common dividends	**(4,858)**	(4,371)	(4,363)	(4,260)	(3,985)	(3,668)	(3,468)
Purchase of shares for cancellation and premium on redemption	**(2,367)**	–	(330)	(850)	(514)	(827)	(61)
Other	**(24)**	(11)	17	(15)	(1)	(16)	(22)
Balance at end of year	**$ 53,761**	$ 51,354	$ 46,345	$ 44,439	$ 41,414	$ 38,117	$ 34,752
Accumulated other comprehensive income (loss)							
Balance at beginning of year	**(5,333)**	(2,125)	570	992	1,577	2,240	2,455
IFRS adjustment	**–**	–	–	–	51	–	–
Restated balances	**(5,333)**	(2,125)	570	992	1,628	2,240	2,455
Cumulative effect of adopting new accounting policies	**–**	–	–	–	–	–	–
Other comprehensive income (loss)	**(1,564)**	(3,134)	(2,668)	(422)	(693)	(663)	(215)
Other	**(269)**	(74)	(27)	–	57	–	–
Balance at end of year	**$ (7,166)**	$ (5,333)	$ (2,125)	$ 570	$ 992	$ 1,577	$ 2,240
Other reserves							
Balance at beginning of year	**222**	360	365	404	116	152	173
Share-based payments[3]	**10**	7	5	7	6	8	7
Other	**(384)**	(145)	(10)	(46)	282	(44)	(28)
Balance at end of year	**$ (152)**	$ 222	$ 360	$ 365	$ 404	$ 116	$ 152
Total common equity	**$ 65,150**	$ 64,750	$ 62,819	$ 63,638	$ 61,044	$ 55,454	$ 52,657
Preferred shares and other equity instruments							
Balance at beginning of year	**6,052**	5,308	3,884	4,184	4,579	3,594	2,934
Net income attributable to preferred shareholders and other equity instrument holders of the Bank	**260**	233	196	182	187	129	130
Preferred and other equity instrument dividends	**(260)**	(233)	(196)	(182)	(187)	(129)	(130)
Issued	**2,523**	2,003	1,689	–	300	1,560	1,350
Redeemed	**(500)**	(1,259)	(265)	(300)	(695)	(575)	(690)
Balance at end of year	**$ 8,075**	$ 6,052	$ 5,308	$ 3,884	$ 4,184	$ 4,579	$ 3,594
Non-controlling interests							
Balance at beginning of year	**2,090**	2,376	2,670	2,452	1,592	1,570	1,460
IFRS adjustment	**–**	–	–	–	(97)	–	–
Restated balances	**2,090**	2,376	2,670	2,452	1,495	1,570	1,460
Net income attributable to non-controlling interests	**258**	331	75	408	176	238	251
Distributions to non-controlling interests	**(115)**	(123)	(148)	(150)	(199)	(133)	(116)
Effect of foreign exchange and others	**(709)**	(494)	(221)	(40)	980	(83)	(25)
Balance at end of year	**$ 1,524**	$ 2,090	$ 2,376	$ 2,670	$ 2,452	$ 1,592	$ 1,570
Total equity at end of year	**$ 74,749**	$ 72,892	$ 70,503	$ 70,192	$ 67,680	$ 61,625	$ 57,821

(1) Includes retrospective adjustments primarily related to foreign currency translation on Allowance for Credit Losses with respect to periods prior to 2013 ($152).
(2) 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.
(3) Represents amounts on account of share-based payments (refer to Note 26 in the consolidated financial statements).

T86 Consolidated Statement of Comprehensive Income

For the year ended October 31 ($ millions)	2022	2021	2020	2019	2018	2017	2016
Net income	**$ 10,174**	$ 9,955	$ 6,853	$ 8,798	$ 8,724	$ 8,243	$ 7,368
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)	**2,454**	(3,520)	(2,239)	(819)	(606)	(1,259)	396
Net change in unrealized gains (losses) onavailable-for-sale securities (debt and equity)[1]	**n/a**	n/a	n/a	n/a	n/a	(55)	(172)
Net change in fair value due to change in debt instruments measured at fair value through other comprehensive income[1]	**(1,212)**	(600)	293	105	(252)	n/a	n/a
Net change in gains (losses) on derivative instruments designated as cash flow hedges	**(4,537)**	(806)	(32)	708	(361)	(28)	258
Other comprehensive income (loss) from investments in associates	**(344)**	37	(2)	103	66	56	31
Items that will not be reclassified subsequently to net income							
Net change in remeasurement of employee benefit plan asset and liability	**678**	1,335	(465)	(815)	318	592	(716)
Net change in fair value due to change in equity instruments designated at fair value through other comprehensive income[1]	**(74)**	408	(85)	95	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[2]	**1,444**	(199)	(298)	8	(22)	(21)	(16)
Other comprehensive income (loss) from investments in associates	**2**	5	(8)	(10)	(7)	6	(10)
Other comprehensive income (loss)	**(1,589)**	(3,340)	(2,836)	(625)	(804)	(709)	(229)
Comprehensive income	**$ 8,585**	$ 6,615	$ 4,017	$ 8,173	$ 7,920	$ 7,534	$ 7,139
Comprehensive income (loss) attributable to:							
Common shareholders of the Bank	**$ 8,092**	$ 6,257	$ 3,914	$ 7,786	$ 7,668	$ 7,213	$ 6,772
Preferred shareholders and other equity instrument holders of the Bank	**260**	233	196	182	187	129	130
Non-controlling interests in subsidiaries	**233**	125	(93)	205	65	192	237
	$ 8,585	$ 6,615	$ 4,017	$ 8,173	$ 7,920	$ 7,534	$ 7,139

(1) The amounts for the years ended October 31, 2018 to October 31, 2022 have been prepared in accordance with IFRS 9; prior period amounts have not been restated.
(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.

2015	2014	2013
$ 15,231	$ 14,516	$ 13,139
104	771	1,377
(194)	(56)	–
$ 15,141	$ 15,231	$ 14,516
28,609	25,315	21,978
–	(247)	(203)
28,609	25,068	21,775
6,897	6,916	6,162
(3,289)	(3,110)	(2,858)
(761)	(264)	–
(140)[1]	(1)	(11)
$ 31,316	$ 28,609	$ 25,068
949	545	(31)
–	(157)	(714)
949	388	(745)
(5)[2]	–	–
1,511	561	1,133
–	–	–
$ 2,455	$ 949	$ 388
176	193	166
14	30	36
(17)	(47)	(9)
$ 173	$ 176	$ 193
$ 49,085	$ 44,965	$ 40,165
2,934	4,084	4,384
117	155	217
(117)	(155)	(217)
–	–	–
–	(1,150)	(300)
$ 2,934	$ 2,934	$ 4,084
1,312	1,155	1,743
–	(17)	(797)
1,312	1,138	946
199	227	231
(86)	(76)	(80)
35	23	41
$ 1,460	$ 1,312	$ 1,138
$ 53,479	$ 49,211	$ 45,387

2015	2014	2013
$ 7,213	$ 7,298	$ 6,610
1,855	889	346
(480)	(38)	110
n/a	n/a	n/a
55	(6)	93
(9)	60	20
(1)	(320)	563
n/a	n/a	n/a
15	n/a	n/a
1	(2)	–
1,436	583	1,132
$ 8,649	$ 7,881	$ 7,742
$ 8,408	$ 7,477	$ 7,298
117	155	217
124	249	227
$ 8,649	$ 7,881	$ 7,742

T87 Other statistics

For the year ended October 31	2022	2021	2020	2019	2018	2017	2016
Operating performance							
Basic earnings per share ($)	**8.05**	7.74	5.43	6.72	6.90	6.55	5.80
Diluted earnings per share ($)	**8.02**	7.70	5.30	6.68	6.82	6.49	5.77
Return on equity (%) (1)	**14.8**	14.7	10.4	13.1	14.5	14.6	13.8
Productivity ratio (%)(1)	**54.4**	53.2	53.8	53.9	52.3	53.9	55.2
Return on assets (%) (1)	**0.79**	0.86	0.59	0.83	0.92	0.90	0.81
Net interest margin (%)(2)	**2.20**	2.23	2.27	2.44	2.46	2.46	2.38
Capital measures(1)(3)							
Common Equity Tier 1 (CET1) capital ratio (%)	**11.5**	12.3	11.8	11.1	11.1	11.5	11.0
Tier 1 capital ratio (%)	**13.2**	13.9	13.3	12.2	12.5	13.1	12.4
Total capital ratio (%)	**15.3**	15.9	15.5	14.2	14.3	14.9	14.6
Leverage ratio (%)	**4.2**	4.8	4.7	4.2	4.5	4.7	4.5
Common share information							
Closing share price ($) (TSX)	**65.85**	81.14	55.35	75.54	70.65	83.28	72.08
Number of shares outstanding (millions)	**1,191**	1,215	1,211	1,216	1,227	1,199	1,208
Dividends paid per share ($)	**4.06**	3.60	3.60	3.49	3.28	3.05	2.88
Dividend yield (%)(1)(4)	**5.1**	5.2	5.8	4.9	4.2	4.0	4.7
Price to earnings multiple (trailing 4 quarters) (1)	**8.2**	10.5	10.2	11.2	10.2	12.7	12.4
Book value per common share ($) (1)	**54.68**	53.28	51.85	52.33	49.75	46.24	43.59
Other information							
Average total assets ($ millions)	**1,281,708**	1,157,213	1,160,584	1,056,063	945,683	912,619	913,844
Number of branches and offices	**2,384**	2,518	2,618	3,109	3,095	3,003	3,113
Number of employees	**90,979**	89,488	91,447	101,380	97,021	87,761	88,901
Number of automated banking machines	**8,610**	8,610	8,791	9,391	9,029	8,140	8,144

(1) Refer to Glossary on page 133 for the description of the measure.
(2) Refer to page 17 for a discussion of non-GAAP measures.
(3) Regulatory capital ratios are determined in accordance with Basel III rules.
(4) Based on the average of the high and low common share price for the year.

2015	2014	2013
5.70	5.69	5.15
5.67	5.66	5.11
14.6	16.1	16.6
54.2	53.4	54.8
0.84	0.92	0.88
2.39	2.39	2.31
10.3	10.8	9.1
11.5	12.2	11.1
13.4	13.9	13.5
4.2	n/a	n/a
61.49	69.02	63.39
1,203	1,217	1,209
2.72	2.56	2.39
4.4	3.8	4.1
10.8	12.1	12.3
40.80	36.96	33.23
860,607	795,641	748,901
3,177	3,288	3,330
89,214	86,932	86,690
8,191	8,732	8,471

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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 Group Head 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, 2022 and October 31, 2021 and its consolidated financial performance and its consolidated cash flows for each of the years in the two-year period ended October 31, 2022 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 reports 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
Group Head and Chief Financial Officer

Toronto, Canada
November 29, 2022

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Directors of The Bank of Nova Scotia

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated statements of financial position of The Bank of Nova Scotia (the Bank) as of October 31, 2022 and 2021, the related consolidated statements of income, comprehensive income, changes in equity and cash flows for the years then ended, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Bank as of October 31, 2022 and 2021, and its financial performance and its cash flows for each of the years then ended, in conformity with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB).

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Bank's internal control over financial reporting as of October 31, 2022, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated November 29, 2022 expressed an unqualified opinion on the effectiveness of the Bank's internal control over financial reporting.

Basis for Opinion

These consolidated financial statements are the responsibility of the Bank's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Bank in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the Audit and Conduct Review Committee and that: (1) relate to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

(i) Assessment of Allowance for Credit Losses on Financial Assets (ACL)

Refer to Notes 3 and 13 to the consolidated financial statements.

The Bank's ACL was $5,348 million as at October 31, 2022. The Bank applies a three-stage approach to measure the ACL, using an expected credit loss (ECL) approach as required under IFRS 9 Financial Instruments. The Bank's ACL calculations are outputs of complex models. The ACL calculation reflects a probability-weighted outcome that considers multiple scenarios based on the Bank's view of forecasts of future events and economic conditions. The probability of default (PD), loss given default (LGD) and exposure at default (EAD) inputs used to estimate ACL are modeled based on macroeconomic variables that are most closely related with credit losses in the relevant portfolio. The Bank assesses when there has been a significant increase in credit risk subsequent to origination or where the financial asset is in default. If there has been a significant increase in credit risk or the financial asset is in default, lifetime ACL is recorded; otherwise, ACL equal to 12 month expected credit losses is recorded. The estimation of ECL for each stage and the assessment of significant increases in credit risk consider information about past events and current conditions as well as forecasts of future events and economic conditions. The estimation and application of forward-looking information requires significant judgment. Qualitative adjustments or overlays may also be recorded as temporary adjustments using expert credit judgment where the inputs, assumptions and/or models do not capture all relevant risk factors.

We identified the assessment of the ACL as a critical audit matter. Significant auditor judgment was required because there was a high degree of measurement uncertainty due to the significant judgments inherent in the Bank's methodology such as judgments about forward-looking information. These judgments impact certain inputs, assumptions, qualitative adjustments or overlays, and the determination of when there has been a significant increase in credit risk. The assessment of the ACL also required significant auditor attention and complex auditor judgment to apply and evaluate the results of audit procedures. Further, specialized skills and knowledge, including experience in the industry, were required to apply audit procedures and evaluate the results of those procedures.

The following are the primary procedures we performed to address this critical audit matter. With the involvement of our credit risk and economics professionals with specialized skills, industry knowledge and relevant experience, we evaluated the design and tested the operating effectiveness of certain internal controls related to the Bank's ACL process. This included internal controls related to: (1) initial and periodic validation and performance monitoring of models used to derive key modeled inputs into the ACL calculation being PD, LGD and EAD; (2) benchmarking of certain macroeconomic variables, model validation associated with the derivation of the remaining variables and the alternative scenarios and review of probability weights used in the ACL models; (3) the methodology to determine whether there has been a significant increase in credit risk; and (4) the methodology and assumptions used in the determination of qualitative adjustments or overlays. Additionally, for non-retail loans, we tested certain internal controls related to loan reviews over the determination of loan risk grades. We involved credit risk and economics professionals with specialized skills, industry knowledge and relevant experience who assisted in: (1) evaluating the methodology and models used to derive key modeled inputs into the ACL calculation being PD, LGD and EAD and the determination of whether there has been a significant increase in credit risk; (2) assessing the appropriateness of certain underlying macroeconomic variables against external economic data, evaluating the model used to derive other macroeconomic variables and evaluating the assumptions associated with the alternative economic scenarios and the related probabilities; and (3) assessing the qualitative adjustments or overlays by applying our knowledge of the industry and credit judgment

Consolidated Financial Statements

to evaluate the appropriateness of the Bank's underlying methodology and assumptions. Additionally, for a selection of non-retail loans, we evaluated the Bank's assigned credit risk ratings to loans against the Bank's borrower risk rating scale.

(ii) Assessment of the Measurement of Fair Value of Certain Financial Instruments

Refer to Notes 3 and 7 to the consolidated financial statements.

The Bank measures $255,794 million of financial assets and $128,785 million of financial liabilities as at October 31, 2022 at fair value on a recurring basis. Where financial instruments trade in inactive markets or when using internal models where observable parameters do not exist, significant management judgment is required for valuation methodologies and model inputs. The valuation techniques used in determining the fair value of financial instruments include internal models and net asset valuations. The significant unobservable inputs used in the Bank's valuation techniques include General Partner valuations per financial statements (NAVs), interest rate volatility, equity volatility and correlation.

We identified the assessment of the measurement of fair value for certain financial instruments as a critical audit matter. Significant auditor judgment was required because there was a high degree of measurement uncertainty due to significant judgments inherent in the Bank's valuation methodologies and significant unobservable inputs used to develop the fair value of certain financial assets and financial liabilities. The assessment of the fair value also required significant auditor attention and complex auditor judgment to apply and evaluate the results of audit procedures. Further, specialized skills and knowledge, including experience in the industry, were required to apply audit procedures and evaluate the results of those procedures.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls related to the Bank's processes to determine the fair value of certain financial instruments with the involvement of valuation and information technology professionals with specialized skills, industry knowledge and relevant experience. This included internal controls related to: (1) model validation at inception and periodically; (2) review of NAVs; (3) independent price verification, including assessment of rate sources; and (4) segregation of duties and access controls. With the involvement of valuation professionals with specialized skills, industry knowledge and relevant experience, we tested the fair value of a selection of certain financial instruments. Depending on the nature of the financial instruments, we did this by comparing the NAV to external information or by developing an independent estimate of fair value and comparing it to the fair value determined by the Bank.

(iii) Assessment of Uncertain Tax Provisions

Refer to Notes 3 and 27 to the consolidated financial statements.

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.

We identified the assessment of uncertain tax provisions as a critical audit matter. Significant auditor judgment was required because there was a high degree of measurement uncertainty due to the significant judgments inherent in the Bank's interpretation of tax law and its best estimate of the ultimate resolution of tax positions. This required significant auditor attention and complex auditor judgment to evaluate the results of audit procedures. Further, specialized skills, industry knowledge, and relevant experience were required to apply audit procedures and evaluate the results of those audit procedures.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls related to the Bank's income tax uncertainties process with the involvement of taxation professionals with specialized skills, industry knowledge and relevant experience. This included internal controls related to the (1) identification of tax uncertainties, including the interpretation of tax law and (2) determination of the best estimate of the provision required to settle these tax uncertainties. We involved tax professionals with specialized skills and knowledge, who assisted in (1) evaluating the Bank's interpretations of tax laws by developing an independent assessment based on our understanding and interpretation of tax laws and considering its impact on the measurement, if applicable, of the uncertain tax provisions; (2) reading and evaluating advice obtained by the Bank from external specialists, and considering its impact on the measurement, if applicable, of the uncertain tax provisions; and (3) inspecting correspondence and settlement documents with applicable taxation authorities, including assessment of the impact of statutes of limitations.



Chartered Professional Accountants, Licensed Public Accountants

We have served as the Bank's auditor since 2006 and as joint auditor for 14 years prior to that.

Toronto, Canada
November 29, 2022

Consolidated Financial Statements

Consolidated Statement of Financial Position

As at October 31 ($ millions)	Note	2022	2021
Assets			
Cash and deposits with financial institutions	6	**$ 65,895**	$ 86,323
Precious metals		**543**	755
Trading assets			
Securities	8(a)	**103,547**	137,148
Loans	8(b)	**7,811**	8,113
Other		**1,796**	1,051
		113,154	146,312
Securities purchased under resale agreements and securities borrowed		**175,313**	127,739
Derivative financial instruments	10	**55,699**	42,302
Investment securities	12	**110,008**	75,199
Loans			
Residential mortgages	13	**349,279**	319,678
Personal loans	13	**99,431**	91,540
Credit cards	13	**14,518**	12,450
Business and government	13	**287,107**	218,944
		750,335	642,612
Allowance for credit losses	13(e)	**5,348**	5,626
		744,987	636,986
Other			
Customers' liability under acceptances, net of allowance		**19,494**	20,404
Property and equipment	16	**5,700**	5,621
Investments in associates	17	**2,633**	2,604
Goodwill and other intangible assets	18	**16,833**	16,604
Deferred tax assets	27(c)	**1,903**	2,051
Other assets	19	**37,256**	21,944
		83,819	69,228
		$ 1,349,418	$ 1,184,844
Liabilities			
Deposits			
Personal	20	**$ 265,892**	$ 243,551
Business and government	20	**597,617**	511,348
Financial institutions	20	**52,672**	42,360
		916,181	797,259
Financial instruments designated at fair value through profit or loss	9	**22,421**	22,493
Other			
Acceptances		**19,525**	20,441
Obligations related to securities sold short		**40,449**	40,954
Derivative financial instruments	10	**65,900**	42,203
Obligations related to securities sold under repurchase agreements and securities lent		**139,025**	123,469
Subordinated debentures	21	**8,469**	6,334
Other liabilities	22	**62,699**	58,799
		336,067	292,200
		1,274,669	1,111,952
Equity			
Common equity			
Common shares	24(a)	**18,707**	18,507
Retained earnings		**53,761**	51,354
Accumulated other comprehensive income (loss)		**(7,166)**	(5,333)
Other reserves		**(152)**	222
Total common equity		**65,150**	64,750
Preferred shares and other equity instruments	24(b)	**8,075**	6,052
Total equity attributable to equity holders of the Bank		**73,225**	70,802
Non-controlling interests in subsidiaries	31(b)	**1,524**	2,090
		74,749	72,892
		$ 1,349,418	$ 1,184,844

Aaron W. Regent
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	2022	2021
Revenue			
Interest income[1]	32		
Loans		**$ 29,390**	$ 23,159
Securities		**2,877**	1,467
Securities purchased under resale agreements and securities borrowed		**459**	178
Deposits with financial institutions		**832**	182
		33,558	24,986
Interest expense	32		
Deposits		**12,794**	6,465
Subordinated debentures		**270**	180
Other		**2,379**	1,380
		15,443	8,025
Net interest income		**18,115**	16,961
Non-interest income			
Card revenues		**779**	749
Banking services fees		**1,770**	1,598
Credit fees		**1,647**	1,485
Mutual funds		**2,269**	2,394
Brokerage fees		**1,125**	1,039
Investment management and trust		**999**	994
Underwriting and advisory fees		**543**	724
Non-trading foreign exchange fees		**878**	787
Trading revenues		**1,791**	2,033
Net gain on sale of investment securities	12(e)	**74**	419
Net income from investments in associated corporations	17	**268**	339
Insurance underwriting income, net of claims		**433**	398
Other fees and commissions		**650**	677
Other		**75**	655
		13,301	14,291
Total revenue		**31,416**	31,252
Provision for credit losses	13(e)	**1,382**	1,808
		30,034	29,444
Non-interest expenses			
Salaries and employee benefits		**8,836**	8,541
Premises and technology		**2,424**	2,351
Depreciation and amortization		**1,531**	1,511
Communications		**361**	369
Advertising and business development		**480**	404
Professional		**826**	789
Business and capital taxes		**541**	511
Other		**2,103**	2,142
		17,102	16,618
Income before taxes		**12,932**	12,826
Income tax expense	27	**2,758**	2,871
Net income		**$ 10,174**	$ 9,955
Net income attributable to non-controlling interests in subsidiaries	31(b)	**258**	331
Net income attributable to equity holders of the Bank		**$ 9,916**	$ 9,624
Preferred shareholders and other equity instrument holders		**260**	233
Common shareholders		**$ 9,656**	$ 9,391
Earnings per common share (in dollars)			
Basic	33	**$ 8.05**	$ 7.74
Diluted	33	**8.02**	7.70
Dividends paid per common share (in dollars)	24(a)	**4.06**	3.60

(1) Includes interest income on financial assets measured at amortized cost and FVOCI, calculated using the effective interest method, of $2,573 for the year ended October 31, 2022 (October 31, 2021 – $24,547).

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)	2022	2021
Net income	**$ 10,174**	$ 9,955
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)	**3,703**	(4,515)
Net gains (losses) on hedges of net investments in foreign operations	**(1,655)**	1,307
Income tax expense (benefit):		
Net unrealized foreign currency translation gains (losses)	**28**	(31)
Net gains (losses) on hedges of net investments in foreign operations	**(434)**	343
	2,454	(3,520)
Net change in fair value due to change in debt instruments measured at fair value through other comprehensive income:		
Net gains (losses) in fair value	**(4,333)**	(1,341)
Reclassification of net (gains) losses to net income	**2,717**	522
Income tax expense (benefit):		
Net gains (losses) in fair value	**(1,108)**	(346)
Reclassification of net (gains) losses to net income	**704**	127
	(1,212)	(600)
Net change in gains (losses) on derivative instruments designated as cash flow hedges:		
Net gains (losses) on derivative instruments designated as cash flow hedges	**(10,037)**	(1,267)
Reclassification of net (gains) losses to net income	**3,880**	176
Income tax expense (benefit):		
Net gains (losses) on derivative instruments designated as cash flow hedges	**(2,709)**	(471)
Reclassification of net (gains) losses to net income	**1,089**	186
	(4,537)	(806)
Other comprehensive income (loss) from investments in associates	**(344)**	37
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	**955**	1,815
Income tax expense (benefit)	**277**	480
	678	1,335
Net change in fair value due to change in equity instruments designated at fair value through other comprehensive income:		
Net gains (losses) in fair value	**(106)**	532
Income tax expense (benefit)	**(32)**	124
	(74)	408
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	**1,958**	(270)
Income tax expense (benefit)	**514**	(71)
	1,444	(199)
Other comprehensive income (loss) from investments in associates	**2**	5
Other comprehensive income (loss)	**(1,589)**	(3,340)
Comprehensive income	**$ 8,585**	$ 6,615
Comprehensive income (loss) attributable to non-controlling interests	**233**	125
Comprehensive income attributable to equity holders of the Bank	**$ 8,352**	$ 6,490
Preferred shareholders and other equity instrument holders	**260**	233
Common shareholders	**$ 8,092**	$ 6,257

The accompanying notes are an integral part of these consolidated financial statements.

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Consolidated Statement of Changes in Equity

($ millions)	Common shares (Note 24)	Retained earnings[1]	Accumulated other comprehensive income (loss)					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
			Foreign currency translation	Debt instruments FVOCI	Equity instruments FVOCI	Cash flow hedges	Other[2]						
Balance as at October 31, 2021	**$ 18,507**	**$ 51,354**	**$ (4,709)**	**$ (270)**	**$ 291**	**$ (214)**	**$ (431)**	**$ 222**	**$ 64,750**	**$ 6,052**	**$ 70,802**	**$ 2,090**	**$ 72,892**
Net income	**–**	**9,656**	**–**	**–**	**–**	**–**	**–**	**–**	**9,656**	**260**	**9,916**	**258**	**10,174**
Other comprehensive income (loss)	**–**	**–**	**2,411**	**(1,212)**	**(35)**	**(4,523)**	**1,795**	**–**	**(1,564)**	**–**	**(1,564)**	**(25)**	**(1,589)**
Total comprehensive income	**$ –**	**$ 9,656**	**$ 2,411**	**$ (1,212)**	**$ (35)**	**$ (4,523)**	**$ 1,795**	**$ –**	**$ 8,092**	**$ 260**	**$ 8,352**	**$ 233**	**$ 8,585**
Shares/instruments issued	**706**	**–**	**–**	**–**	**–**	**–**	**–**	**(18)**	**688**	**2,523**	**3,211**	**–**	**3,211**
Shares repurchased/redeemed	**(506)**	**(2,367)**	**–**	**–**	**–**	**–**	**–**	**–**	**(2,873)**	**(500)**	**(3,373)**	**–**	**(3,373)**
Dividends and distributions paid to equity holders	**–**	**(4,858)**	**–**	**–**	**–**	**–**	**–**	**–**	**(4,858)**	**(260)**	**(5,118)**	**(115)**	**(5,233)**
Share-based payments[3]	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**10**	**10**	**–**	**10**	**–**	**10**
Other	**–**	**(24)**	**(180)**	**–**	**(40)**	**(49)**	**–**	**(366)[4]**	**(659)**	**–**	**(659)**	**(684)[4]**	**(1,343)**
Balance as at October 31, 2022	**$ 18,707**	**$ 53,761**	**$ (2,478)**	**$ (1,482)**	**$ 216**	**$ (4,786)**	**$ 1,364**	**$ (152)**	**$ 65,150**	**$ 8,075**	**$ 73,225**	**$ 1,524**	**$ 74,749**
Balance as at October 31, 2020	$ 18,239	$ 46,345	$ (1,328)	$ 330	$ (163)	$ 639	$ (1,603)	$ 360	$ 62,819	$ 5,308	$ 68,127	$ 2,376	$ 70,503
Net income	–	9,391	–	–	–	–	–	–	9,391	233	9,624	331	9,955
Other comprehensive income (loss)	–	–	(3,322)	(600)	460	(844)	1,172	–	(3,134)	–	(3,134)	(206)	(3,340)
Total comprehensive income	$ –	$ 9,391	$ (3,322)	$ (600)	$ 460	$ (844)	$ 1,172	$ –	$ 6,257	$ 233	$ 6,490	$ 125	$ 6,615
Shares/instruments issued	268	–	–	–	–	–	–	(25)	243	2,003	2,246	–	2,246
Shares repurchased/redeemed	–	–	–	–	–	–	–	–	–	(1,259)	(1,259)	–	(1,259)
Dividends and distributions paid to equity holders	–	(4,371)	–	–	–	–	–	–	(4,371)	(233)	(4,604)	(123)	(4,727)
Share-based payments[3]	–	–	–	–	–	–	–	7	7	–	7	–	7
Other	–	(11)	(59)	–	(6)	(9)	–	(120)[4]	(205)	–	(205)	(288)[4]	(493)
Balance as at October 31, 2021	$ 18,507	$ 51,354	$ (4,709)	$ (270)	$ 291	$ (214)	$ (431)	$ 222	$ 64,750	$ 6,052	$ 70,802	$ 2,090	$ 72,892

(1) Includes undistributed retained earnings of $67 (2021 – $60) 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) Represents amounts on account of share-based payments (refer to Note 26).
(4) Includes changes to non-controlling interests arising from business combinations and related transactions (refer to Note 36).

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)	2022	2021
Cash flows from operating activities		
Net income	**$ 10,174**	$ 9,955
Adjustment for:		
Net interest income	**(18,115)**	(16,961)
Depreciation and amortization	**1,531**	1,511
Provision for credit losses	**1,382**	1,808
Equity-settled share-based payment expense	**10**	7
Net gain on sale of investment securities	**(74)**	(419)
Net (gain)/loss on divestitures	**233**	9
Net income from investments in associated corporations	**(268)**	(339)
Income tax expense	**2,758**	2,871
Changes in operating assets and liabilities:		
Trading assets	**37,501**	(33,995)
Securities purchased under resale agreements and securities borrowed	**(41,438)**	(14,202)
Loans	**(97,161)**	(55,748)
Deposits	**95,905**	78,569
Obligations related to securities sold short	**(1,292)**	10,078
Obligations related to securities sold under repurchase agreements and securities lent	**10,838**	(7,709)
Net derivative financial instruments	**115**	2,123
Other, net	**(1,404)**	(5,300)
Dividends received	**1,156**	969
Interest received	**31,931**	25,425
Interest paid	**(13,336)**	(8,766)
Income tax paid	**(3,503)**	(2,693)
Net cash from/(used in) operating activities	**16,943**	(12,807)
Cash flows from investing activities		
Interest-bearing deposits with financial institutions	**25,783**	(15,006)
Purchase of investment securities	**(97,736)**	(72,259)
Proceeds from sale and maturity of investment securities	**63,130**	103,765
Acquisition/divestiture of subsidiaries, associated corporations or business units, net of cash	**(549)**	(717)
Property and equipment, net of disposals	**(571)**	(462)
Other, net	**(1,350)**	(624)
Net cash from/(used in) investing activities	**(11,293)**	14,697
Cash flows from financing activities		
Proceeds from issue of subordinated debentures	**3,356**	–
Redemption/repurchase of subordinated debentures	**(1,276)**	(750)
Proceeds from preferred shares and other equity instruments issued	**2,523**	2,003
Redemption of preferred shares	**(500)**	(1,259)
Proceeds from common shares issued	**137**	268
Common shares purchased for cancellation	**(2,873)**	–
Cash dividends and distributions paid	**(5,118)**	(4,604)
Distributions to non-controlling interests	**(115)**	(123)
Payment of lease liabilities	**(322)**	(344)
Other, net	**(391)**	2,032
Net cash from/(used in) financing activities	**(4,579)**	(2,777)
Effect of exchange rate changes on cash and cash equivalents	**301**	(543)
Net change in cash and cash equivalents	**1,372**	(1,430)
Cash and cash equivalents at beginning of year[1]	**9,693**	11,123
Cash and cash equivalents at end of year[1]	**$ 11,065**	$ 9,693

(1) 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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Consolidated Financial Statements

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, Ontario, Canada. The common shares of the Bank are listed on the Toronto Stock Exchange (TSX) 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 the 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, 2022 have been approved by the Board of Directors for issue on November 29, 2022.

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
- Equity instruments designated at fair value through other comprehensive income
- Debt instruments measured at fair value through other comprehensive income

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.

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, and other comprehensive income and income and expenses during the reporting period. Estimates made by management are based on historical experience and other factors and 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 and provisions. The Bank has utilized estimates, assumptions and judgments that reflect this uncertainty. 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 the Bank's involvement with other entities.

Consolidated Financial Statements

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
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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.

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. 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. For the Bank to control an entity, all 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.

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).

Non-controlling interests are presented within equity in the Consolidated Statement of Financial Position separate from equity attributable to equity holders of the Bank. The net income attributable to non-controlling interests is presented separately in the Consolidated Statement of Income. 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.

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 controls an entity 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.

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.

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.

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
The Bank's investments in joint arrangements over which the Bank has joint control 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.

For joint operations, the Bank recognizes its direct rights to, and its share of jointly held assets, liabilities, revenues and expenses. These have been incorporated in the consolidated financial statements under the appropriate headings.

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. 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 meeting the definition of 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 the consideration paid or received. 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

Classification and measurement

Classification and measurement of financial assets
Financial assets include both debt and equity instruments, 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

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.

Consolidated Financial Statements

Business model assessment
A business model assessment involves determining how financial assets are managed to generate cash flows. The Bank's business model assessment is based on the following categories:

- Held to collect: The objective of this 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 the 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;
- How the business lines' management is compensated for managing the Bank's assets based on the fair value or the contractual cash flows collected;
- Whether the assets are held for trading purposes;
- 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 the 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, along with changes in fair value of the hedging instrument. Upon derecognition, realized gains and losses are reclassified from OCI and recorded in Non-interest income in the Consolidated Statement of Income. 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 determined 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 amortized cost is recognized in OCI with a corresponding charge to provision for credit losses in the Consolidated Statement of Income. The accumulated allowance recognized 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
The Bank designates certain debt instruments at FVTPL upon initial recognition, and the designation is irrevocable. The FVTPL designation is available when a fair value is reliably estimated, and doing so eliminates or significantly reduces an accounting mismatch which would otherwise arise.

Debt instruments 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 and dividends received are recognized in the Consolidated Statement of Income.

Equity instruments measured at FVOCI
At initial recognition, the Bank has an option to classify non-trading equity instruments at FVOCI. This election is irrevocable and is made on an instrument-by-instrument basis.

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 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
The Bank designates certain financial liabilities at FVTPL upon initial recognition, and the designation is irrevocable. The FVTPL designation is available when a fair value is reliably estimated.

Financial liabilities are designated at FVTPL when it meets one of the following criteria:

- 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 line 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 OCI. Changes in fair value due to changes in the Bank's own credit risk are not subsequently reclassified to the Consolidated Statement of Income upon derecognition/extinguishment of the liabilities.

Determination of fair value
The 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. Fair value based on unadjusted quoted market prices for identical instruments in active markets represents a Level 1 valuation. When quoted market prices are not available, the Bank maximizes the use of observable inputs within valuation models. When a fair value is based on all significant market observable inputs, 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 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, *Fair Value Measurement* 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 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, funding costs and constraints on prices in inactive or illiquid markets.

Consolidated Financial Statements

Derecognition of financial assets and liabilities

Derecognition of financial assets
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.

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.

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, considering 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. 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 four probability-weighted forward-looking scenarios. The Bank considers both internal and external sources of information and data in order to achieve 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 three 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.

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.

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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 Consolidated Statement of Income.

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 Consolidated Statement of Income.

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, except for 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.

Modification of financial instruments in the context of interest rate benchmark reform – Phase 2 amendments
When the basis for determining the contractual cash flows of a financial asset or financial liability measured at amortized cost is changed as a result of interest rate benchmark reform (IBOR reform), the Bank updates the effective interest rate of the financial asset or financial liability similar to a floating rate financial instrument and does not derecognize or adjust the carrying amount (the practical expedient). The practical expedient is applied only when the modification is required as a direct consequence of IBOR reform, and the new basis for determining the contractual cash flows is economically equivalent to the previous basis. If changes are made to a financial asset or financial liability in addition to changes to the basis for determining the contractual cash flows required by the interest rate benchmark reform, then the Bank sequentially updates the effective interest first to reflect the change required by IBOR reform and then applies its policies on modification or derecognition of financial assets and financial liabilities.

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 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 comprise cash, cash equivalents, demand deposits with banks and other financial institutions, and highly liquid investments that are readily convertible to cash, subject to an 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 value 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) require the purchase of securities by the Bank 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) require the sale of securities by the Bank 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 more than, 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 in 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 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 a repurchase agreement or securities purchased under a reverse repurchase agreement, respectively. Interest income on cash collateral paid and interest expense on cash collateral received together with securities lending income and securities borrowing fee are reported in the Consolidated Statement of Income.

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, commodity prices, 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.

Derivatives embedded in other financial liabilities or host contracts are treated as separate stand-alone 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 the Consolidated Statement of Financial Position on a combined basis with the host contracts. Changes in fair value of embedded derivatives that are separated from the host contract 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 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. Also, 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.

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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 within an 80-125% range. This assessment incorporates a comparison of critical terms of the hedged and hedging item, and regression analysis, in order to determine (i) whether the hedge relationship is expected to be highly effective going forward (i.e. prospective effectiveness assessment) and (ii) whether the hedge was actually highly effective for the designated period (i.e. retrospective effectiveness assessment). In assessing prospective hedge effectiveness for a hedge relationship directly impacted by the IBOR reform, the Bank will assume that the benchmark interest rate is not altered as a result of the IBOR reform. In instances of assessing retrospective hedge effectiveness where a hedge relationship directly impacted by the IBOR reform falls outside of the 80-125% range solely as a result of the IBOR reform, the Bank will continue hedge accounting as long as other hedge accounting requirements are met.

Hedge ineffectiveness is measured and recorded in non-interest income – other in the Consolidated Statement of Income. When the basis for determining the contractual cash flows of existing hedge relationships changes as a result of the IBOR reform, the Bank updates the hedge documentation without discontinuing the hedging relationship. For cash flow hedges where the interest benchmark changes as a result of the IBOR reform, the Bank deems that the corresponding hedge reserve in OCI is based on the alternative benchmark rate to determine whether the hedged future cash flows are expected to occur. For changes that are in addition to those required by the IBOR reform, the Bank first determines whether the additional changes result in discontinuation of hedge relationships before applying the relief. In addition, when determining the hedged risk, the Bank may designate an alternative benchmark rate risk component that is not currently separately identifiable, as the Bank reasonably expects that the alternative benchmark rate will become separately identifiable within a 24-month period.

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 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 uses 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 are recognized in income. For hedges that are discontinued, the cumulative unrealized gain or loss recognized in other comprehensive income is reclassified to 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 uses 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, subordinated debentures 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.

For the Bank's cash flow hedges of forecasted transactions that are directly affected by the IBOR Reform, it is assumed that the benchmark interest rate will not be altered as a result of the IBOR Reform for purposes of assessing whether the transactions are highly probable or whether the transactions are still expected to occur.

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 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 – up to 40 years, building fittings – up to 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.

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.

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Business combinations and goodwill

The Bank follows the acquisition method of accounting for the acquisition of a business. 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 financial liability is recognized 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.

The Bank determines the carrying value of the CGU using a regulatory capital approach based on credit, market, 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 and 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, initial measurement 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 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.

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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. It is possible that additional liability and income tax expense could arise in the future, depending on the acceptance of the Bank's tax positions by the relevant tax authorities in the jurisdictions in which the Bank operates.

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

At inception of a contract, the Bank assesses whether a contract is, or contains, a lease. A contract is a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. When the Bank is a lessee it recognizes a right-of-use ("ROU") asset and a lease liability except for short-term leases for assets that have a lease term of 12 months or less and leases of low value items. For short-term leases and low value items the Bank recognizes the lease payment associated with these leases as an expense on a straight-line basis over the lease term.

Asset

A ROU is an asset that represents a lessee's right to use an underlying asset for the lease term. The ROU asset is initially measured at cost, which is based on the initial amount of the lease liability, and any direct costs incurred, any lease payments made at or before the commencement date net of lease incentives received and estimated decommissioning costs.

The ROU asset is subsequently measured at cost less accumulated depreciation and accumulated impairment losses, if any. The ROU asset is depreciated using the straight-line method from the commencement date to the earlier of the end of the useful life of the ROU asset or the end of the lease term. The depreciation is recorded in Depreciation and amortization in the Consolidated Statement of Income. In addition, the ROU asset is adjusted for certain remeasurements of the lease liability.

Liability

At commencement date, the Bank initially measures the lease liability at the present value of the future lease payments, discounted using the Bank's incremental borrowing rate that takes into account the Bank's credit risk and economic environment in which the lease is entered. The lease liability is subsequently measured at amortized cost using the effective interest method. It is re-measured if the Bank changes its assessment of whether it will exercise a purchase, extension or termination option. Interest expense is recorded in Interest expense – Other in the Consolidated Statement of Income.

When the lease liability is re-measured in this way, a corresponding adjustment is made to the carrying amount of the ROU asset or is recorded in profit or loss if the carrying amount of the right-of-use asset has been reduced to zero.

Presentation

The Bank presents ROU assets in Property and equipment and lease liabilities in Other liabilities in the Consolidated Statement of Financial Position.

Determining lease term

The Bank's expectation of exercising the option to renew a lease is determined by assessing if the Bank is "reasonably certain" to exercise that option. The Bank will be reasonably certain to exercise an option when factors create a significant economic incentive to do so. This assessment considers the following criteria: key locations for its branch network, locations on which the Bank has spent significant capital on renovation work, contribution to profit, value of locations based on current economic environment and the remaining term of existing leases.

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 earnings), 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 U.S. 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.

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 (credit), settlement gain (loss) and administrative expense are recognized in net income. Net interest expense (income) is calculated by applying the discount rate 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 or less than 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 Other 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 costs of such plans are equal to contributions payable by the Bank to employees' accounts for service rendered during the period and expensed.

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.

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 gross 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 deferred and amortized in interest income over the term of the loan where the yield the Bank retains is less than that of the comparable lenders in the syndicate.

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 interest income on the loan. When it is unlikely that a loan will be drawn down, the loan commitment fees are recognized in non-interest income.

Fee and commission revenues

Revenue is recognized once the Bank's customer has obtained control of the service. The transfer of control occurs when the Bank's customer has the ability to direct the use of and obtain the benefits of the banking services and the contractual performance obligation to the customer has been satisfied. The Bank records revenue gross of expenses where it is the principal in performing a service to the customer and net of expenses where the Bank is an agent for these services. The assessment of principal or agent requires judgement on the basis of whether the Bank controls the services before they are transferred to the customer. From time to time, the Bank may receive variable consideration such as performance fees. These fees are only recognized when it is highly probable that the Bank will not need to reverse a significant amount of revenue.

Card revenues include interchange fees, annual fees and other card related fees. Interchange fees are calculated as a percentage of the transaction and are recognized on the transaction date. Annual fees are recognized in income over 12 months. Other card fees are transaction-based and are recognized on the transaction date.

The Bank operates various loyalty points programs, which allow customers to accumulate points when using the Bank's products and services. Loyalty point liabilities are subject to periodic remeasurement to reflect the expected cost of redemption. Where the customer has the option to redeem points for statement credits, the cost of the loyalty program is presented net of card fees. Where points can only be redeemed for goods or services, interchange revenue allocated to the loyalty rewards is recognized when the rewards are redeemed. Reward costs are recorded in non-interest expense.

Banking services fees consist of fees earned on personal, business and government deposit activities. Personal deposit-related fees consist of account maintenance and various transaction-based services. Business and government deposit-related fees consist of commercial deposit and treasury management services and other cash management services. These fees are recognized on the transaction date or over time as services are provided to the customer.

Credit fees include fees earned for providing letters of credit and guarantee, loan commitments, bankers' acceptances, and for arranging loan syndications. These fees are recognized on the transaction date or over time as services are provided based on contractual agreements with the customer.

Mutual funds fees include management and administration fees which are earned in the Bank's wealth management business. These fees are calculated as a percentage of the fund's net asset value and recognized as the service is provided. From time to time, the Bank may also recognize performance fees from some funds. These fees are only recognized to the extent that it is highly probable that a significant reversal of revenue will not occur.

Brokerage fees relate to fees earned for providing full-service and discount brokerage services to clients. These fees are contractually agreed and can be asset-based or linked to individual transactions. Such fees are recognized as the service is provided to clients or on the trade date.

Investment management and trust fees include administration, trust services and other investment services provided to clients. These fees are contractually agreed upon and can be linked to portfolio values or individual transactions. Such fees are recognized as the service is provided to clients to the extent that it is highly probable that a significant reversal of revenue will not occur.

Underwriting and other advisory fees relate to fees earned for services provided to clients in relation to the placement of debt and equities. Such fees also include services to clients for mergers, acquisitions, financial restructurings and other corporate finance activities. These fees are recognized when the service has been performed and/or contractual milestones are completed. Performance and completion fees are variable consideration and generally contingent on the successful completion of a transaction.

Other fees and commissions include commissions earned on the sale of third party insurance products to the Bank's customers. Such fees and commissions are recognized when the performance obligation is completed.

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 when the Bank's right to receive payment is established, which is on theex-dividend date for listed equity securities.

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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 arere-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.

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 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.

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 four operating segments: Canadian Banking, International Banking, Global Wealth Management 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.

Given 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.

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 notes, NVCC limited recourse capital notes and NVCC preferred shares is based on an automatic conversion formula as set out in the respective prospectus supplements.

4 Interest Rate Benchmark Reform

Overview

Major interest rate benchmark reviews have been undertaken globally to either reform or phase out certain interbank offered rates (IBORs), including the Canadian Dollar Offered Rate (CDOR). As alternatives to IBORs, regulators have recommended markets begin adopting alternative risk-free rates (RFRs). Further to previous announcements by various regulators, the publication of GBP, JPY, CHF, and EUR LIBORs ceased after December 31, 2021, while most of the USD LIBOR tenors (i.e., overnight, one-month, three-month, six-month and 12-month tenors) continue to be published until June 30, 2023.

The Federal Reserve Board and other U.S. agencies have encouraged banks to transition away from USD LIBOR and cease entering new contracts after December 31, 2021, to facilitate an orderly transition. Similarly, OSFI stated that Federally Regulated Financial Institutions (FRFIs) should not enter new transactions using USD LIBOR as a reference rate after December 31, 2021.

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On March 15, 2022, the U.S. Federal LIBOR legislation was signed into law establishing a framework for the replacement of USD LIBOR as the benchmark interest rate in existing contracts lacking effective fallback provisions that are difficult to amend before the cessation.

On May 16, 2022, Refinitiv Benchmark Services (UK) Limited (RBSL), the administrator of the CDOR, announced the cessation of the publication of one-month, two-month, and three-month CDOR tenors after June 28, 2024, and this was authorized by the Ontario Securities Commission and the Autorité des marchés financiers. This announcement provides certainty regarding the future of one-month, two-month, and three-month CDOR tenors and serves to set the fixed spread adjustment that will be used in industry standard fallback provisions for both derivative and cash products. The Canadian Alternative Reference Rate (CARR) committee has published a detailed transition roadmap with milestones to guide market participants on the transition away from CDOR across all product types. The CARR also confirmed the intention to move forward with the development of forward-looking Term CORRA which is expected to become available in Q3 2023. OSFI has also set out expectations for FRFIs, with transactions linked to CDOR, to transition to new reference rates prior to the cessation date.

IBOR reform and the associated move from IBORs to RFRs carries systemic and market risks. These risks, such as increased volatility, lack of liquidity and uneven fallback practices, may impact market participants. In addition to these inherent risks, the Bank is exposed to operational risk arising from the renegotiation of contracts, technology readiness to issue and trade products referencing RFRs, and conduct with clients and counterparties.

The Bank has established an enterprise-wide program (the Transition Program) to support the Bank's transition away from IBORs to RFRs. The focus of the Transition Program is to address risks by identifying the exposures to various IBORs, evaluating the existing contract language in the event the IBORs cease to be published or available, developing the capabilities to issue and trade products referencing RFRs and communicating with clients and counterparties regarding industry developments pertaining to IBOR reform. The Transition Program provides quarterly updates to the Bank's Regulatory Oversight Committee, and annually, to the Risk Committee of the Board of Directors, regarding the status of transition plans for migrating the Bank's IBOR-linked products and upgrading systems and processes. The Transition Program continues its efforts on the transition of products referencing USD LIBOR and ensuring the Bank is not building its exposure to USD LIBOR, except as permitted by the regulators. As well, the Transition Program has updated its project plans to align with the CDOR transition roadmap and milestones published by the CARR committee and ensure alignment with OSFI's expectations for FRFIs.

Non-derivative financial assets and financial liabilities

The following table reflects the Bank's IBOR exposure to non-derivative financial assets and financial liabilities as at October 31, 2022, subject to reform that has yet to transition to alternative benchmark rates. The Bank's IBOR exposure to financial instruments includes USD LIBOR and SGD Swap Offer Rate (SOR) maturing after June 30, 2023, and one-month, two-month, and three-month CDOR maturing after June 28, 2024. Six-month and twelve-month CDOR tenors ceased to be published after May 17, 2021. These exposures could remain outstanding until IBOR ceases and will therefore transition in the future.

	Carrying amount							
	As at October 31, 2022				As at November 1, 2021			
($ millions)	USD LIBOR Maturing after June 30, 2023	CDOR Maturing after June 28, 2024	Other Rates[1] Maturing after June 30, 2023	Total	USD LIBOR Maturing after June 30, 2023	CDOR Maturing after June 28, 2024	Other Rates[1] Maturing after June 30, 2023	Total
Non-derivative financial assets[3]	**$ 35,877**	**$ 23,936**	**$ 114**	**$ 59,927**	$ 38,517	$ 11,284	$ 102	$ 49,903
Non-derivative financial liabilities[4]	**1,225**	**23,390[2]**	**–**	**24,615**	1,306	13,424[2]	–	14,730

(1) Includes exposures to SGD SOR maturing after June 30, 2023.
(2) Excludes the Series 2006-1 Bank Deposit Note of $750 million which is currently at a fixed rate and will subsequently reset to asix-month CDOR based rate after December 31, 2036.
(3) Non derivative financial assets include carrying amounts of debt securities, loans and customer's liability under acceptances (debt securities, loans and customer's liability under acceptances measured at amortized cost are gross of allowance for credit losses).
(4) Non-derivative financial liabilities include carrying amounts of deposits, acceptances, obligations related to securities sold short, subordinated debentures and other liabilities.

In addition to the exposures noted in the table above, Additional Tier 1 (AT1) capital instruments of $1.56 billion (US$1.25 billion) were reset to three-month USD LIBOR on October 12, 2022.

Derivatives and undrawn commitments

The following table reflects the Bank's IBOR exposure to derivatives and undrawn commitments as at October 31, 2022, subject to reform that has yet to transition to alternative benchmark rates. The Bank's IBOR exposure to financial instruments includes USD LIBOR and SGD SOR maturing after June 30, 2023, and one-month, two-month, and three-month CDOR maturing after June 28, 2024. These exposures could remain outstanding until IBOR ceases and will therefore transition in the future.

	Notional amount							
	As at October 31, 2022				As at November 1, 2021			
($ millions)	USD LIBOR Maturing after June 30, 2023	CDOR Maturing after June 28, 2024	Other Rates[1] Maturing after June 30, 2023	Total	USD LIBOR Maturing after June 30, 2023	CDOR Maturing after June 28, 2024	Other Rates[1] Maturing after June 30, 2023	Total
Derivatives								
Single currency interest rate swaps[2]	**$ 797,296**	**$ 1,025,373**	**$ 962**	**$ 1,823,631**	$ 600,359	$ 574,897	$ 918	$ 1,176,174
Cross currency interest rate swaps[2]	**297,490**	**122,718**	**–**	**420,208**	280,968	71,047	–	352,015
Other[3]	**14,946**	**3,574**	**–**	**18,520**	38,078	1,355	–	39,433
Undrawn commitments	**9,047**	**4,787**	**–**	**13,834**	32,454	2,875	91	35,420

(1) Includes exposures to SGD SOR maturing after June 30, 2023.
(2) For single currency and/or cross currency interest rate swaps, where both legs are referencing rates directly impacted by theinterest rate benchmark reform, the relevant notional amount for both legs are shown separately to reflect the risks relating to the reform for each rate.
(3) Other derivatives include futures, forward rate agreements, total return swaps and options.

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Hedging derivatives

The following table reflects the Bank's IBOR exposure to hedging derivatives as at October 31, 2022, subject to reform that has yet to transition to alternative benchmark rates. The Bank's IBOR exposure to hedging derivatives include USD LIBOR maturing after June 30, 2023, and one-month, two-month, and three-month CDOR maturing after June 28, 2024. These exposures will remain outstanding until IBOR ceases and will therefore transition in the future.

	Notional amount					
	As at October 31, 2022			As at October 31, 2021		
($ millions)	USD LIBOR Maturing after June 30, 2023	CDOR[2] Maturing after June 28, 2024	Total	USD LIBOR Maturing after June 30, 2023	CDOR[2] Maturing after June 28, 2024	Total
Hedging derivatives[1]	**$ 67,934**	**$ 109,253**	**$ 177,187**	$ 61,936	$ 104,175	$ 166,111

(1) For cross currency swaps where both legs are referencing rates directly impacted by the interest rate benchmark reform, and a CAD leg is inserted to create two separate hedging relationships, the relevant notional amount for both legs are included in this table.
(2) For single currency interest rate swaps, where both legs are referencing rates directly impacted by the interest rate benchmark reform, the relevant notional amount for both legs are shown separately to reflect the risks relating to the reform for each rate.

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 impact of adoption of new standards issued by the IASB on its consolidated financial statements and also evaluating the alternative elections available on transition.

Effective November 1, 2023

Insurance Contracts

The International Accounting Standards Board issued IFRS 17 *Insurance Contracts* on May 18, 2017, to replace IFRS 4 Insurance Contracts and is effective for annual periods beginning on or after January 1, 2023. IFRS 17 provides a comprehensive principle-based framework for the recognition, measurement, presentation and disclosure of insurance contracts. The standard is to be applied on a full retrospective basis unless impractical, and then either the modified retrospective or fair value method may be used.

Under IFRS 17, groups of insurance contracts will be measured using current probability-weighted fulfillment cash flows and revenue will be recognized as the service is provided over the coverage period, based on the three measurement models as applicable: the general measurement model, the variable fee approach and the premium allocation approach.

For groups of contracts that are measured under the general measurement model and the variable fee approach, the contractual service margin will be recognized at initial recognition as a component of the carrying amount of the insurance contracts. Contractual service margin represents unearned profits to be recognized as coverage is provided in the future. The premium allocation approach will be applied to short duration contracts and results in insurance revenue being recognized over the coverage period systematically. For all measurement models, if the group of contracts is expected to be onerous, the losses will be recognized immediately.

IFRS 17 will be effective for the Bank from November 1, 2023 and is being implemented as a multi-year project for the Bank's insurance and reinsurance entities. The project has an established governance structure led by the Executive Steering and Project Operations Committees assisted by a Project Management Office. The committees are comprised of representatives from Finance, Insurance Actuarial Services, Technology and the Insurance Business Operations. The Project involves technology implementation, policy and process changes to support the IFRS 17 processes. The Bank continues to assess and formulate the impact of adopting the new standard, including quantification.

6 Cash and Deposits with Financial Institutions

As at October 31 ($ millions)	2022	2021
Cash and non-interest-bearing deposits with financial institutions	**$ 11,065**	$ 9,693
Interest-bearing deposits with financial institutions	**54,830**	76,630
Total	**$ 65,895[1]**	$ 86,323[1]

(1) Net of allowances of $4 (2021 – $1).

The Bank is required to maintain balances with central banks, other regulatory authorities and certain counterparties and these amounted to $5,958 million (2021 – $5,719 million) and are included above.

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 Bank discloses the classification of all financial instruments carried at fair value in a hierarchy based on the determination of fair value. The best evidence of fair value for a financial instrument is the quoted price in an active market. Fair value based on unadjusted quoted market prices for identical instruments in active markets represents 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 of 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, exchanges and pricing services. The valuation policies relating to the IPV process require that all pricing or rate sources used be external to the Bank. At least annually, an independent assessment of pricing or rate sources is performed to determine the market presence or market representative levels.

Quoted prices are not always available for over-the-counter (OTC) transactions as well as transactions in inactive or illiquid markets. OTC transactions are valued using internal models that maximize the use of observable inputs to estimate fair value. The chosen valuation technique incorporates all the factors that market participants would take into account in pricing a transaction. When a fair value is based on all significant market observable inputs, the valuation is classified as Level 2. Financial instruments traded in a less active market can be valued using indicative market prices, the 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, significant management judgment is required for valuation methodologies and model inputs. 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 171.

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 are comprised of loans for market making, loans that serve as hedges to total return swaps, purchased mortgages pooled for securitization, and precious metal loans. Trading loans for market making or that serve as hedges to loan-based credit total return swaps are valued using consensus prices from Bank approved independent pricing services. Purchased mortgages that are held prior to securitization are valued using inputs observed from the MBS market. Precious metal loans are valued using a discounted cash flow model incorporating observable market inputs, including precious metals spot and forward prices and interest rate curves.

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. Where quoted prices in active markets are not available, the fair value is determined by utilizing recent transaction prices, reliable broker quotes, or pricing services, which derive fair values using only observable valuation inputs, which are significant to the fair values.

For securities for which quoted prices are not available, the Bank uses a discounted cash flow method, using the effective yield of a similar instrument adjusted for instrument-specific risk factors that are observable inputs such as credit spread and contracted features.

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 from an active market. Where direct prices from active markets are not available, the valuation is performed with a yield-based valuation approach. In some instances, interpolated yields of similar bonds are used to price securities. The Bank uses pricing models with observable inputs from market sources such as credit spread, interest rate curves, and recovery rates. 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 significant inputs used to price such instruments.

Mortgage-backed securities

The fair value of residential mortgage-backed securities is primarily determined using broker quotes and independent market data providers. In limited circumstances, an internal price-based model may be used with the unobservable inputs that are significant to the fair value.

Equity securities

The fair value of equity securities is based on unadjusted quoted prices in active markets, where available. Where equity securities are less frequently traded, the most recent exchange-quoted pricing is used to determine fair value.

For private equity securities, where quoted prices in active markets are not readily available, the fair value is determined as a multiple of the underlying earnings or percentage of underlying net asset value obtained from third-party general partner statements.

Derivatives

Fair values of exchange-traded derivatives are based on unadjusted quoted market prices from an active market. Fair values of over-the-counter (OTC) derivatives or inactive exchange-traded derivatives are determined using pricing models, which take into account observable valuation inputs 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. 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, forward rates and interest rate curves.

Derivative products valued using a valuation technique with significant unobservable inputs, such as volatility, correlation, and forward curves, may include long dated contracts (interest rate swaps, currency swaps, option contracts, commodity contracts and certain credit default swaps) and other derivative products that reference a basket of assets.

Loans

The estimated fair value of loans carried at amortized cost reflects changes in the general level of interest rates and creditworthiness 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.
- 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.
- 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.
- 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.

Deposits under the Canada Mortgage Bond (CMB) program are fair valued by discounting expected future contractual cash flows using market observable inputs.

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.

For structured notes containing embedded features that are bifurcated from plain vanilla notes, the fair value of the embedded derivatives is determined using option pricing models with observable inputs similar to other interest rate or equity derivative contracts.

Certain deposits that are designated at FVTPL are structured notes. Their coupon or repayment terms can be linked to the performance of market parameters such as interest rates, equities, and foreign currencies. The fair value of these structured notes is determined using models which incorporate observable market inputs, such as interest rate curves, equity prices, equity volatility and foreign exchange rates. Some structured notes may have significant unobservable inputs to model valuation such as interest rate volatility and equity correlation.

Obligations related to securities sold short

The fair values of these obligations are based on the fair value of the underlying securities, which can include debt or equity securities. The method used to determine fair value is based on the quoted market prices where available in an active market.

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. The fair values of other liabilities are determined by the discounted contractual cash flow method with appropriate currency swap curves for the remaining term or market prices for instruments with similar terms and risks.

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.

	2022		2021	
As at October 31 ($ millions)	**Total fair value**	**Total carrying value**	Total fair value	Total carrying value
Assets:				
Cash and deposits with financial institutions	**$ 65,895**	**$ 65,895**	$ 86,323	$ 86,323
Trading assets	**113,154**	**113,154**	146,312	146,312
Securities purchased under resale agreements and securities borrowed	**175,313**	**175,313**	127,739	127,739
Derivative financial instruments	**55,699**	**55,699**	42,302	42,302
Investment securities – FVOCI and FVTPL	**86,398**	**86,398**	57,042	57,042
Investment securities – amortized cost	**22,443**	**23,610**	18,133	18,157
Loans	**729,149**	**744,987**	641,964	636,986
Customers' liability under acceptances	**19,494**	**19,494**	20,404	20,404
Other financial assets	**27,394**	**27,394**	14,256	14,256
Liabilities:				
Deposits	**904,033**	**916,181**	798,335	797,259
Financial instruments designated at fair value through profit or loss	**22,421**	**22,421**	22,493	22,493
Acceptances	**19,525**	**19,525**	20,441	20,441
Obligations related to securities sold short	**40,449**	**40,449**	40,954	40,954
Derivative financial instruments	**65,900**	**65,900**	42,203	42,203
Obligations related to securities sold under repurchase agreements and securities lent	**139,025**	**139,025**	123,469	123,469
Subordinated debentures	**8,038**	**8,469**	6,733	6,334
Other financial liabilities	**45,723**	**46,682**	39,802	40,254

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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.

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.

	2022				2021			
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[1]	$ –	$ 543	$ –	$ 543	$ –	$ 755	$ –	$ 755
Trading assets								
Loans	–	7,811	–	7,811	–	8,113	–	8,113
Canadian federal government and government guaranteed debt	10,139	4,595	–	14,734	9,272	3,842	–	13,114
Canadian provincial and municipal debt	4,299	5,978	–	10,277	5,556	4,298	–	9,854
US treasury and other US agencies' debt	11,957	–	–	11,957	6,760	63	–	6,823
Other foreign governments' debt	15	8,287	–	8,302	129	9,559	–	9,688
Corporate and other debt	2,367	8,976	1	11,344	2,595	9,185	40	11,820
Equity securities	46,698	224	11	46,933	85,688	160	1	85,849
Other	–	1,796	–	1,796	–	1,051	–	1,051
	$ 75,475	$ 37,667	$ 12	$ 113,154	$ 110,000	$ 36,271	$ 41	$ 146,312
Investment securities[2]								
Canadian federal government and government guaranteed debt	$ 4,947	$ 6,055	$ –	$ 11,002	$ 1,125	$ 4,679	$ –	$ 5,804
Canadian provincial and municipal debt	2,029	3,400	–	5,429	1,937	3,218	–	5,155
US treasury and other US agencies' debt	32,412	2,824	–	35,236	11,462	2,175	–	13,637
Other foreign governments' debt	3,217	24,487	–	27,704	67	26,605	17	26,689
Corporate and other debt	40	1,874	48	1,962	10	1,319	27	1,356
Equity securities	3,210	215	1,640	5,065	2,879	218	1,304	4,401
	$ 45,855	$ 38,855	$ 1,688	$ 86,398	$ 17,480	$ 38,214	$ 1,348	$ 57,042
Derivative financial instruments								
Interest rate contracts	$ –	$ 15,193	$ 17	$ 15,210	$ –	$ 13,124	$ 1	$ 13,125
Foreign exchange and gold contracts	–	32,223	–	32,223	–	18,293	–	18,293
Equity contracts	332	2,209	20	2,561	184	3,513	21	3,718
Credit contracts	–	780	–	780	–	245	–	245
Commodity contracts	–	4,912	13	4,925	–	6,921	–	6,921
	$ 332	$ 55,317	$ 50	$ 55,699	$ 184	$ 42,096	$ 22	$ 42,302
Liabilities:								
Deposits	$ –	$ 15	$ –	$ 15	$ –	$ 175	$ –	$ 175
Financial liabilities designated at fair value through profit or loss	–	22,421	–	22,421	–	22,354	139	22,493
Obligations related to securities sold short	35,059	5,387	3	40,449	35,487	5,467	–	40,954
Derivative financial instruments								
Interest rate contracts	–	22,842	12	22,854	–	13,148	15	13,163
Foreign exchange and gold contracts	–	35,634	–	35,634	–	18,171	–	18,171
Equity contracts	636	3,063	21	3,720	307	4,737	6	5,050
Credit contracts	–	25	–	25	–	30	–	30
Commodity contracts	–	3,660	7	3,667	–	5,789	–	5,789
	$ 636	$ 65,224	$ 40	$ 65,900	$ 307	$ 41,875	$ 21	$ 42,203
Instruments not carried at fair value [3]**:**								
Assets:								
Investment securities – amortized cost	$ 2,086	$ 20,357	$ –	$ 22,443	$ 3,714	$ 14,417	$ 2	$ 18,133
Loans[4]	–	–	407,267	407,267	–	–	400,565	400,565
Liabilities:								
Deposits[4]	–	365,134	–	365,134	–	290,341	–	290,341
Subordinated debentures	–	8,038	–	8,038	–	6,733	–	6,733
Other liabilities	–	23,679	330	24,009	–	24,414	209	24,623

(1) The fair value of precious metals is determined based on quoted market prices and forward spot prices, where applicable, less the cost to sell.
(2) Excludes debt investment securities measured at amortized cost of $23,610 (October 31, 2021 – $18,157).
(3) Represents the fair value of financial assets and liabilities where the carrying amount is not a reasonable approximation of fair value.
(4) Represents fixed rate instruments.

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Level 3 instrument fair value changes

Financial instruments categorized as Level 3 as at October 31, 2022, in the fair value hierarchy comprised of structured corporate bonds, equity securities, complex derivatives and obligations related to securities sold short.

The following table summarizes the changes in Level 3 instruments carried at fair value for the year ended October 31, 2022.

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, 2022							
($ millions)	Fair value November 1 2021	Gains/(losses) recorded in income	Gains/(losses) recorded in OCI	Purchases/ Issuances	Sales/ Settlements	Transfers into/out of Level 3	Fair value October 31 2022	Change in unrealized gains/(losses) recorded in income for instruments still held[1]
Trading assets								
Corporate and other debt	$ 40	$ (2)	$ –	$ –	$ (31)	$ (6)	$ 1	$ –
Equity securities	1	–	–	3	(1)	8	11	–
	41	(2)	–	3	(32)	2	12	–
Investment securities								
Other foreign governments' debt	17	–	–	60	–	(77)	–	n/a
Corporate and other debt	27	(2)	(14)	42	(5)	–	48	(3)
Equity securities	1,304	284	13	261	(226)	4	1,640	284
	1,348	282	(1)	363	(231)	(73)	1,688	281
Derivative financial instruments – assets								
Interest rate contracts	1	12	–	6	–	(2)	17	12
Equity contracts	21	(4)	–	5	–	(2)	20	(2)[2]
Commodity contracts	–	13	–	–	–	–	13	13
Derivative financial instruments – liabilities								
Interest rate contracts	(15)	(12)	–	–	–	15	(12)	(10)[3]
Equity contracts	(6)	(10)	–	(7)	–	2	(21)	(6)[2]
Commodity contracts	–	(7)	–	–	–	–	(7)	(7)
	1	(8)	–	4	–	13	10	–
Financial liabilities designated at fair value through profit or loss	(139)	23	–	(22)	12	126	–	–
Obligations related to securities sold short	–	–	–	(2)	3	(4)	(3)	–
Total	$ 1,251	$ 295	$ (1)	$ 346	$ (248)	$ 64	$ 1,707	$ 281

(1) 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.
(2) 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.
(3) 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, 2021.

	As at October 31, 2021						
($ millions)	Fair value November 1 2020	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 2021
Trading assets	$ 18	$ 7	$ –	$ 28	$ (94)	$ 82	$ 41
Investment securities	910	288	41	260	(180)	29	1,348
Derivative financial instruments	(12)	(4)	–	(62)	51	28	1
Financial liabilities designated at fair value through profit or loss	–	(2)	–	(101)	–	(36)	(139)

(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.

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 becomes available. The Bank recognizes transfers between levels of the fair value hierarchy at the end of the reporting period during which the change has occurred.

The following significant transfers made between Levels 1 and 2 were based on whether the fair value was determined using quoted market prices from an active market.

During the year-ended October 31, 2022:

- Trading assets of $705 million, investment securities of $401 million and obligations related to securities sold short of $40 million were transferred out of Level 2 into Level 1.
- Trading assets of $2,099 million, investment securities of $491 million and obligations related to securities sold short of $867 million were transferred out of Level 1 into Level 2.

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During the year-ended October 31, 2021:

- Trading assets of $10,045 million, investment securities of $3,407 million and obligations related to securities sold short of $2,550 million were transferred out of Level 2 into Level 1.
- Trading assets of $9,972 million, investment securities of $13,522 million and obligations related to securities sold short of $2,235 million were transferred out of Level 1 into Level 2.

The following significant transfers made between Levels 2 and 3 were based on whether the fair value was determined using significant unobservable inputs.

During the year-ended October 31, 2022:

- Investments in other foreign governments' debt of $77 million and financial liabilities designated at fair value through profit or loss of $126 million were transferred out of Level 3 into Level 2.

During the year-ended October 31, 2021:

- Trading equity securities of $72 million were transferred out of Level 2 into Level 3.

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)
Investment securities				
Private equity securities[2]	Market comparable	General Partner valuations per net asset value Capitalization rate	 97% 3%	 (65)/65
Derivative financial instruments				
Interest rate contracts	Option pricing model	Interest rate volatility	16% - 93%	(1)/1
Equity contracts	Option pricing model	Equity volatility Correlation	2% - 64% (58%) - 97%	 (6)/6
Commodity contracts	Discounted cash flow	Forward curves	4% - 15%	(4)/4

(1) The range of estimates represents the actual lowest and highest level inputs used to fair value financial instruments within each financial statement category.
(2) The valuation of private equity securities utilizes net asset values as reported by fund managers. Net asset values are not considered observable as the Bank cannot redeem these instruments at such values. The range for net asset values per unit or price per share has not been disclosed for these instruments since the valuations are not model-based.

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.

General Partner (GP) Valuations per Net Asset Value

Net asset values provided by GPs represent the fair value of investments in private equity securities.

Correlation

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 for equity derivatives is a measure of asset price fluctuation. Interest rate volatility measures variability of a security yield or interest rate. Historic volatility is often calculated as the annualized standard deviation of daily price or yield variation for a given time period. Implied volatility is such that, when input into an option pricing model, returns a value equal to the current market value of the option.

Forward curves

Monthly forward curves for commodity contracts are required inputs to valuation. A portion of the forward curves are unobservable.

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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, 2022 ($ 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	**$ 1,072**	**$ 2,581**	**$ 7,089**	**$ 1,934**	**$ 2,057**	**$ 1**	**$ 14,734**
Canadian provincial and municipal debt	**1,906**	**1,839**	**948**	**1,256**	**4,328**	**–**	**10,277**
U.S. treasury and other U.S. agency debt	**1,216**	**5,224**	**3,277**	**2,000**	**240**	**–**	**11,957**
Other foreign government debt	**2,610**	**1,643**	**3,545**	**356**	**148**	**–**	**8,302**
Common shares	**–**	**–**	**–**	**–**	**–**	**46,753**	**46,753**
Other	**540**	**1,620**	**5,415**	**2,706**	**1,064**	**179**	**11,524**
Total	**$ 7,344**	**$ 12,907**	**$ 20,274**	**$ 8,252**	**$ 7,837**	**$ 46,933**	**$ 103,547**
Total by currency (in Canadian equivalent):							
Canadian dollar	**$ 3,274**	**$ 5,206**	**$ 10,243**	**$ 4,336**	**$ 6,859**	**$ 27,961**	**$ 57,879**
U.S. dollar	**1,304**	**5,694**	**6,448**	**3,550**	**836**	**12,347**	**30,179**
Mexican peso	**411**	**1,094**	**2,891**	**77**	**64**	**120**	**4,657**
Other currencies	**2,355**	**913**	**692**	**289**	**78**	**6,505**	**10,832**
Total trading securities	**$ 7,344**	**$ 12,907**	**$ 20,274**	**$ 8,252**	**$ 7,837**	**$ 46,933**	**$ 103,547**

As at October 31, 2021 ($ 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	$ 868	$ 892	$ 6,134	$ 2,399	$ 2,821	$ –	$ 13,114
Canadian provincial and municipal debt	778	1,434	1,829	1,215	4,598	–	9,854
U.S. treasury and other U.S. agency debt	61	1,097	3,366	2,123	176	–	6,823
Other foreign government debt	3,226	2,000	4,022	293	147	–	9,688
Common shares	–	–	–	–	–	85,016	85,016
Other	873	1,547	5,969	2,180	1,251	833	12,653
Total	$ 5,806	$ 6,970	$ 21,320	$ 8,210	$ 8,993	$ 85,849	$ 137,148
Total by currency (in Canadian equivalent):							
Canadian dollar	$ 2,151	$ 2,663	$ 9,034	$ 4,663	$ 8,028	$ 28,116	$ 54,655
U.S. dollar	432	1,848	7,618	3,124	717	42,386	56,125
Mexican peso	1,038	820	2,316	17	40	630	4,861
Other currencies	2,185	1,639	2,352	406	208	14,717	21,507
Total trading securities	$ 5,806	$ 6,970	$ 21,320	$ 8,210	$ 8,993	$ 85,849	$ 137,148

(b) Trading loans

The following table provides the geographic breakdown of trading loans:

As at October 31 ($ millions)	**2022**	2021
Trading loans[1][2]		
U.S.[3]	**$ 6,489**	$ 5,308
Europe[4]	**708**	548
Asia Pacific[4]	**–**	15
Canada[4]	**512**	2,034
Other[4]	**102**	208
Total	**$ 7,811**	$ 8,113

(1) Geographic segmentation of trading loans is based upon the location of the ultimate risk of the underlying asset.
(2) Loans are primarily denominated in U.S. dollars.
(3) Includes trading loans that serve as a hedge to loan-based credit total return swaps of $6,414 (2021 – $5,203), 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.

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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 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 at a benchmark rate.

The following table presents the fair value of financial 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)	**2022**	2021	**2022**	2021	**2022**	2021
Liabilities						
Senior note liabilities[2]	**$ 22,421**	$ 22,493	**$ 8,600**	$ (906)	**$ 7,893**	$ (707)

(1) The cumulative change in fair value is measured from the instruments' date of initial recognition.
(2) 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 offsetting fair value changes from associated derivatives is also 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				
($ millions)	Contractual maturity amount	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, 2022	**$ 30,314**	**$ 22,421**	**$ 7,893**	**$ 1,958**	**$ 1,229**
As at October 31, 2021	$ 21,786	$ 22,493	$ (707)	$ (270)	$ (729)

(1) The cumulative change in fair value is measured from the instruments' date of initial recognition.

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.

	2022			2021		
As at October 31 ($ millions)	Trading	Hedging	Total	Trading	Hedging	Total
Interest rate contracts						
Exchange-traded:						
Futures	**$ 205,283**	**$ –**	**$ 205,283**	$ 123,348	$ –	$ 123,348
Options purchased	**–**	**–**	**–**	2,562	–	2,562
Options written	**–**	**–**	**–**	1,000	–	1,000
	205,283	**–**	**205,283**	126,910	–	126,910
Over-the-counter:						
Forward rate agreements	**305**	**–**	**305**	820	–	820
Swaps	**365,945**	**30,871**	**396,816**	336,144	27,875	364,019
Options purchased	**39,321**	**–**	**39,321**	38,298	–	38,298
Options written	**44,567**	**–**	**44,567**	40,785	–	40,785
	450,138	**30,871**	**481,009**	416,047	27,875	443,922
Over-the-counter (settled through central counterparties):						
Forward rate agreements	**132,691**	**–**	**132,691**	219,021	–	219,021
Swaps	**5,061,950**	**255,932**	**5,317,882**	3,708,222	289,185	3,997,407
Options purchased	**–**	**–**	**–**	–	–	–
Options written	**–**	**–**	**–**	–	–	–
	5,194,641	**255,932**	**5,450,573**	3,927,243	289,185	4,216,428
Total	**$ 5,850,062**	**$ 286,803**	**$ 6,136,865**	$ 4,470,200	$ 317,060	$ 4,787,260
Foreign exchange and gold contracts						
Exchange-traded:						
Futures	**$ 14,880**	**$ –**	**$ 14,880**	$ 15,798	$ –	$ 15,798
Options purchased	**–**	**–**	**–**	–	–	–
Options written	**–**	**–**	**–**	–	–	–
	14,880	**–**	**14,880**	15,798	–	15,798
Over-the-counter:						
Spot and forwards	**433,314**	**38,737**	**472,051**	381,737	28,642	410,379
Swaps	**576,564**	**118,890**	**695,454**	502,558	67,617	570,175
Options purchased	**25,783**	**–**	**25,783**	16,256	–	16,256
Options written	**26,716**	**–**	**26,716**	16,495	–	16,495
	1,062,377	**157,627**	**1,220,004**	917,046	96,259	1,013,305
Over-the-counter (settled through central counterparties):						
Spot and forwards	**15,662**	**–**	**15,662**	16,627	–	16,627
Swaps	**–**	**–**	**–**	–	–	–
Options purchased	**–**	**–**	**–**	–	–	–
Options written	**–**	**–**	**–**	–	–	–
	15,662	**–**	**15,662**	16,627	–	16,627
Total	**$ 1,092,919**	**$ 157,627**	**$ 1,250,546**	$ 949,471	$ 96,259	$ 1,045,730
Other derivative contracts						
Exchange-traded:						
Equity	**$ 56,472**	**$ –**	**$ 56,472**	$ 52,335	$ –	$ 52,335
Credit	**–**	**–**	**–**	–	–	–
Commodity and other contracts	**30,441**	**–**	**30,441**	31,652	–	31,652
	86,913	**–**	**86,913**	83,987	–	83,987
Over-the-counter:						
Equity	**62,617**	**873**	**63,490**	92,052	965	93,017
Credit	**19,957**	**–**	**19,957**	20,800	–	20,800
Commodity and other contracts	**31,959**	**–**	**31,959**	29,476	–	29,476
	114,533	**873**	**115,406**	142,328	965	143,293
Over-the-counter (settled through central counterparties):						
Equity	**–**	**–**	**–**	–	–	–
Credit	**7,077**	**–**	**7,077**	6,621	–	6,621
Commodity and other contracts	**388**	**–**	**388**	201	–	201
	7,465	**–**	**7,465**	6,822	–	6,822
Total	**$ 208,911**	**$ 873**	**$ 209,784**	$ 233,137	$ 965	$ 234,102
Total notional amounts outstanding	**$ 7,151,892**	**$ 445,303**	**$ 7,597,195**	$ 5,652,808	$ 414,284	$ 6,067,092

(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.

(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, 2022 ($ millions)	Within one year	One to five years	Over five years	Total
Interest rate contracts				
Futures	**$ 144,488**	**$ 60,795**	**$ –**	**$ 205,283**
Forward rate agreements	**109,569**	**23,122**	**305**	**132,996**
Swaps	**2,458,160**	**2,142,509**	**1,114,029**	**5,714,698**
Options purchased	**16,599**	**19,841**	**2,881**	**39,321**
Options written	**13,897**	**18,045**	**12,625**	**44,567**
	2,742,713	**2,264,312**	**1,129,840**	**6,136,865**
Foreign exchange and gold contracts				
Futures	**7,334**	**7,342**	**204**	**14,880**
Spot and forwards	**452,733**	**27,323**	**7,657**	**487,713**
Swaps	**175,690**	**331,270**	**188,494**	**695,454**
Options purchased	**18,916**	**6,514**	**353**	**25,783**
Options written	**21,698**	**4,675**	**343**	**26,716**
	676,371	**377,124**	**197,051**	**1,250,546**
Other derivative contracts				
Equity	**78,998**	**40,414**	**550**	**119,962**
Credit	**17,124**	**6,602**	**3,308**	**27,034**
Commodity and other contracts	**42,464**	**20,027**	**297**	**62,788**
	138,586	**67,043**	**4,155**	**209,784**
Total	**$ 3,557,670**	**$ 2,708,479**	**$ 1,331,046**	**$ 7,597,195**

As at October 31, 2021 ($ millions)	Within one year	One to five years	Over five years	Total
Interest rate contracts				
Futures	$ 68,444	$ 54,787	$ 117	$ 123,348
Forward rate agreements	172,600	46,433	808	219,841
Swaps	1,461,005	1,989,045	911,376	4,361,426
Options purchased	22,432	15,694	2,734	40,860
Options written	17,428	14,895	9,462	41,785
	1,741,909	2,120,854	924,497	4,787,260
Foreign exchange and gold contracts				
Futures	9,032	6,382	384	15,798
Spot and forwards	399,518	21,526	5,962	427,006
Swaps	116,067	287,705	166,403	570,175
Options purchased	12,215	3,976	65	16,256
Options written	14,373	2,115	7	16,495
	551,205	321,704	172,821	1,045,730
Other derivative contracts				
Equity	102,031	43,146	175	145,352
Credit	15,554	7,810	4,057	27,421
Commodity and other contracts	39,966	21,182	181	61,329
	157,551	72,138	4,413	234,102
Total	$ 2,450,665	$ 2,514,696	$ 1,101,731	$ 6,067,092

(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, 2022. To control credit risk associated with derivatives, the Bank uses similar credit risk management activities and procedures to the approaches used in the lending business in assessing and adjudicating exposure. The Bank utilizes a risk metric, potential future exposure (PFE) for derivatives, to measure utilization

against established credit limits to the counterparty. PFE measures the effect that changes in the market have on derivative exposures throughout the lifetime of the counterparties' trades. Additionally, PFE considers risk mitigants such as netting and collateralization. PFE limits and utilization for derivatives counterparties are authorized and monitored by the Bank's risk management unit.

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 84 of the 2022 Annual Report).

Derivative 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, and 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. CRA takes into account master netting or collateral arrangements that have been made[1]. CRA does not reflect actual or expected losses.

The credit equivalent amount (CEA) is the exposure at default (EAD) prescribed in the Capital Adequacy Requirements (CAR) Guidelines of the Office of the Superintendent of Financial Institutions (OSFI). The risk-weighted asset 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.

	2022				2021			
As at October 31 ($ millions)	Notional amount	Credit risk amount (CRA)(1)	Credit equivalent amount (CEA)(1)	Risk-Weighted Assets	Notional amount	Credit risk amount (CRA)(1)	Credit equivalent amount (CEA)(1)	Risk-Weighted Assets
Interest rate contracts								
Futures	**$ 205,283**	**$ –**	**$ 10**	**$ –**	$ 123,348	$ –	$ 18	$ 1
Forward rate agreements	**132,996**	**311**	**93**	**55**	219,841	32	125	68
Swaps	**5,714,698**	**4,331**	**7,655**	**589**	4,361,426	3,951	4,760	1,120
Options purchased	**39,321**	**183**	**179**	**50**	40,860	70	44	10
Options written	**44,567**	**–**	**7**	**1**	41,785	–	11	3
	6,136,865	**4,825**	**7,944**	**695**	4,787,260	4,053	4,958	1,202
Foreign exchange and gold contracts								
Futures	**14,880**	**–**	**253**	**5**	15,798	–	148	3
Spot and forwards	**487,713**	**1,784**	**5,834**	**1,425**	427,006	1,604	4,455	1,404
Swaps	**695,454**	**2,147**	**10,330**	**2,273**	570,175	1,128	7,287	1,660
Options purchased	**25,783**	**472**	**638**	**172**	16,256	351	247	118
Options written	**26,716**	**–**	**16**	**3**	16,495	–	14	2
	1,250,546	**4,403**	**17,071**	**3,878**	1,045,730	3,083	12,151	3,187
Other derivative contracts								
Equity	**119,962**	**636**	**6,534**	**968**	145,352	1,423	9,707	1,340
Credit	**27,034**	**271**	**415**	**136**	27,421	197	304	59
Commodity and other contracts	**62,788**	**2,636**	**9,057**	**649**	61,329	4,562	6,610	1,182
	209,784	**3,543**	**16,006**	**1,753**	234,102	6,182	16,621	2,581
Credit Valuation Adjustment	**–**	**–**	**–**	**6,422**	–	–	–	3,957
Total derivatives	**$ 7,597,195**	**$ 12,771**	**$ 41,021**	**$ 12,748**	$ 6,067,092	$ 13,318	$ 33,730	$ 10,927
Amount settled through central counterparties(2)								
Exchange-traded	**307,076**	**–**	**8,110**	**175**	226,695	–	5,200	123
Over-the-counter	**5,473,700**	**–**	**4,175**	**83**	4,239,877	–	849	17
	$ 5,780,776	**$ –**	**$ 12,285**	**$ 258**	$ 4,466,572	$ –	$ 6,049	$ 140

(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 $32,929 (2021 – $28,961) for CRA, and $84,431 (2021 – $67,487) for CEA.

(2) Amounts are included under total derivatives above. Amounts include exposures settled directly through central counterparties and exposures settled through clearing members of central counterparties.

[1] Regulatory haircuts prescribed by the OSFI CAR Guidelines are applied to the collateral balances of the CRA measure.

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(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)	2022 Average fair value		2022 Year-end fair value		2021 Year-end fair value(1)	
	Favourable	Unfavourable	Favourable	Unfavourable	Favourable	Unfavourable
Trading						
Interest rate contracts						
Forward rate agreements	**$ 121**	**$ 23**	**$ 311**	**$ 48**	$ 69	$ 3
Swaps	**9,243**	**10,631**	**8,385**	**8,300**	9,805	9,427
Options	**558**	**563**	**1,384**	**571**	412	195
	9,922	**11,217**	**10,080**	**8,919**	10,286	9,625
Foreign exchange and gold contracts						
Forwards	**6,782**	**5,412**	**8,624**	**7,128**	4,823	4,154
Swaps	**12,148**	**12,461**	**15,672**	**16,722**	9,070	10,796
Options	**462**	**361**	**795**	**576**	357	259
	19,392	**18,234**	**25,091**	**24,426**	14,250	15,209
Other derivative contracts						
Equity	**3,555**	**4,041**	**2,560**	**3,648**	3,677	5,049
Credit	**487**	**25**	**780**	**25**	245	30
Commodity and other contracts	**7,317**	**5,964**	**4,925**	**3,667**	6,921	5,789
	11,359	**10,030**	**8,265**	**7,340**	10,843	10,868
Trading derivatives' market valuation	**$ 40,673**	**$ 39,481**	**$ 43,436**	**$ 40,685**	$ 35,379	$ 35,702
Hedging						
Interest rate contracts						
Swaps			**$ 5,130**	**$ 13,935**	$ 2,839	$ 3,538
Foreign exchange and gold contracts						
Forwards			**956**	**1,078**	461	236
Swaps			**6,176**	**10,130**	3,582	2,726
			$ 7,132	**$ 11,208**	$ 4,043	$ 2,962
Other derivative contracts						
Equity			**$ 1**	**$ 72**	$ 41	$ 1
Hedging derivatives' market valuation			**$ 12,263**	**$ 25,215**	$ 6,923	$ 6,501
Total derivative financial instruments as per Statement of Financial Position			**$ 55,699**	**$ 65,900**	$ 42,302	$ 42,203
Less: impact of master netting and collateral(2)			**42,929**	**42,929**	28,961	28,961
Net derivative financial instruments(2)			**$ 12,770**	**$ 22,971**	$ 13,341	$ 13,242

(1) The average fair value of trading derivatives' market valuation for the year ended October 31, 2021 was: favourable $7,046 and unfavourable $35,339. 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 fixed to floating rate 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 rate exposure. The Bank generally hedges interest rate risk only to the extent of benchmark interest rates.

Foreign currency risk

In fair value hedges, cross-currency 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 basis swaps and single-currency interest rate swaps are mainly used to convert a foreign currency fixed rate exposure to a functional currency floating rate exposure. 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.

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 to another currency. Single-currency interest rate swaps may be used in conjunction with cross-currency 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, including purchase considerations for business acquisitions and sale proceeds for business divestitures that are 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.

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 currency translation impact from the net investment will be offset by the foreign currency 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 key terms such as the underlying reference interest rate tenor, reset/settlement frequency and floating spread 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 table summarizes the notional amounts of derivatives and carrying amounts of cash and deposit liabilities designated as hedging instruments.

	2022				2021			
	Notional amounts[1]				Notional amounts[1]			
	Remaining term to maturity				Remaining term to maturity			
As at October 31 ($ millions)	Within one year	One to five years	Over five years	Total	Within one year	One to five years	Over five years	Total
Fair value hedges								
Interest rate risk – swaps	**$ 35,535**	**$ 89,709**	**$ 17,588**	**$ 142,832**	$ 21,850	$ 127,350	$ 14,489	$ 163,689
Foreign currency/interest rate risk – swaps	**–**	**–**	**–**	**–**	–	11	–	11
Cash flow hedges								
Interest rate risk – swaps	**18,267**	**69,933**	**34,180**	**122,380**	34,489	62,934	28,754	126,177
Foreign currency/interest rate risk – swaps	**16,886**	**17,628**	**8,527**	**43,041**	16,906	23,224	7,645	47,775
Foreign currency risk								
Swaps	**47,525**	**89,863**	**28,745**	**166,133**	29,002	54,434	14,425	97,861
Foreign currency forwards	**14,699**	**–**	**–**	**14,699**	10,510	–	–	10,510
Cash	**77**	**–**	**–**	**77**	66	–	–	66
Equity risk – total return swaps	**270**	**603**	**–**	**873**	316	649	–	965
Net investment hedges								
Foreign currency risk								
Foreign currency forwards	**24,038**	**–**	**–**	**24,038**	18,132	–	–	18,132
Deposit liabilities	**6,289**	**–**	**–**	**6,289**	5,714	–	–	5,714
Total	**$ 163,586**	**$ 267,736**	**$ 89,040**	**$ 520,362**	$ 136,985	$ 268,602	$ 65,313	$ 470,900

(1) Notional amounts relating to derivatives that are hedging multiple risks in both assets and liabilities are included in more than one category.

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The following table shows the average rate or price of significant hedging instruments.

As at October 31	2022 Average rate or price[1] Fixed interest rate	2022 Average rate or price[1] FX rate	2022 Average rate or price[1] Price	2021 Average rate or price[1] Fixed interest rate	2021 Average rate or price[1] FX rate	2021 Average rate or price[1] Price
Fair value hedges						
Interest rate risk – swaps	**1.83%**	**n/a**	**n/a**	1.18%	n/a	n/a
Cash flow hedges						
Interest rate risk – swaps	**2.57%**	**n/a**	**n/a**	1.22%	n/a	n/a
Foreign currency/interest rate risk – swaps						
CAD-USD	**1.70%**	**1.30**	**n/a**	1.33%	1.31	n/a
Foreign currency risk						
Swaps						
CAD-USD	**n/a**	**1.27**	**n/a**	n/a	1.27	n/a
CAD-EUR	**n/a**	**1.19**	**n/a**	n/a	1.50	n/a
CAD-GBP	**n/a**	**1.56**	**n/a**	n/a	1.72	n/a
Foreign currency forwards						
CAD-USD	**n/a**	**1.29**	**n/a**	n/a	1.26	n/a
Equity price risk – total return swaps	**n/a**	**n/a**	**$ 65.85**	n/a	n/a	$ 71.29
Net investment hedges						
Foreign currency risk – foreign currency forwards						
CAD-USD	**n/a**	**1.29**	**n/a**	n/a	1.26	n/a
MXN-CAD	**n/a**	**16.91**	**n/a**	n/a	16.77	n/a
PEN-CAD	**n/a**	**3.07**	**n/a**	n/a	3.08	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 to 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, 2022 ($ millions)	Carrying amount of the hedging instruments[1] Assets	Carrying amount of the hedging instruments[1] Liabilities	Hedge Ineffectiveness[2] Gains/(losses) on hedging instrument used to calculate hedge ineffectiveness	Hedge Ineffectiveness[2] Gains/(losses) on hedged item used to calculate hedge ineffectiveness	Hedge Ineffectiveness[2] 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	Accumulated amount of fair value hedge adjustment gains/(losses) on the hedged item[4] Discontinued hedges
Fair value hedges								
Interest rate risk – swaps	**$ 4,238**	**$ (4,635)**	**$ 1,188**	**$ (1,179)**	**$ 9**			
Investment securities			**2,837**	**(2,811)**	**26**	**$ 31,325**	**$ (2,500)**	**$ 54**
Loans			**2,550**	**(2,579)**	**(29)**	**111,469**	**(1,552)**	**(1,926)**
Deposit liabilities			**(3,998)**	**4,010**	**12**	**(72,004)**	**3,997**	**312**
Subordinated debentures			**(201)**	**201**	**–**	**(5,354)**	**202**	**(44)**
Foreign currency/interest rate risk – swaps	**–**	**–**	**–**	**–**	**–**			
Investment securities			**–**	**–**	**–**	**80**	**–**	**(1)**
Total	**$ 4,238**	**$ (4,635)**	$ 1,188	$ (1,179)	$ 9	$ 65,516	$ 147	$ (1,605)

(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, 2022.
(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 the year ended October 31, 2021 ($ millions)	Carrying amount of the hedging instruments[1]		Hedge Ineffectiveness[2]				Accumulated amount of fair value hedge adjustment gains/(losses) on the hedged item[4]	
	Assets	Liabilities	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]	Active hedges	Discontinued hedges
Fair value hedges								
Interest rate risk – swaps	$ 1,868	$ (967)	$ 1,708	$ (1,736)	$ (28)			
Investment securities			790	(809)	(19)	$ 16,315	$ 92	$ 163
Loans			2,233	(2,230)	3	117,009	(1,339)	5
Deposit liabilities			(1,236)	1,224	(12)	(60,444)	417	(371)
Subordinated debentures			(79)	79	–	(4,692)	(1)	(71)
Foreign currency/interest rate risk – swaps	–	(1)	3	(2)	1			
Investment securities			3	(2)	1	89	–	(1)
Total	$ 1,868	$ (968)	$ 1,711	$ (1,738)	$ (27)	$ 68,277	$ (831)	$ (275)

(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, 2021.
(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.

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, 2022 ($ 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 hedging instrument used to calculate hedge ineffectiveness[3]	Ineffectiveness recorded in non-interest income – other[4]
Cash flow hedges					
Interest rate risk – swaps	**$ 1,977**	**$ (7,683)**	**$ (4,193)**	**$ (4,250)**	**$ 11**
Foreign currency/interest rate risk – swaps	**314**	**(3,277)**	**(4,318)**	**(4,349)**	**(24)**
Foreign currency risk					
Swaps	**4,777**	**(8,470)**	**(2,592)**	**(2,589)**	**(5)**
Foreign currency forwards	**678**	**(61)**	**1,162**	**1,159**	**2**
Cash	**72**	**–**	**22**	**22**	**–**
Equity risk – total return swaps	**1**	**(72)**	**(134)**	**(134)**	**–**
	7,819	**(19,563)**	**(10,053)**	**(10,141)**	**(16)**
Net investment hedges					
Foreign currency risk					
Foreign currency forwards	**278**	**(1,017)**	**(1,343)**	**(1,343)**	**–**
Deposit liabilities	**n/a**	**(6,289)**	**(574)**	**(574)**	**–**
	278	**(7,306)**	**(1,917)**	**(1,917)**	**–**
Total	**$ 8,097**	**$ (26,869)**	**$ (11,970)**	**$ (12,058)**	**$ (16)**

(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, 2022.
(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.

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For the year ended October 31, 2021 ($ 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 hypothetical derivative used to calculate hedge ineffectiveness[3]	Ineffectiveness recorded in non-interest income – other[4]
Cash flow hedges					
Interest rate risk – swaps	$ 1,204	$ (2,818)	$ (1,004)	$ (1,017)	$ 16
Foreign currency/interest rate risk – swaps	2,428	(180)	1,352	1,378	(5)
Foreign currency risk					
Swaps	921	(2,298)	(1,969)	(1,973)	1
Foreign currency forwards	25	(155)	72	69	5
Cash	66	–	(2)	(2)	–
Equity risk – total return swaps	41	(1)	330	330	–
	4,685	(5,452)	(1,221)	(1,215)	17
Net investment hedges					
Foreign currency risk					
Foreign currency forwards	436	(81)	841	841	–
Deposit liabilities	n/a	(5,714)	435	435	–
	436	(5,795)	1,276	1,276	–
Total	$ 5,121	$ (11,247)	$ 55	$ 61	$ 17

(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, 2021.
(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 thelife-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, 2022 ($ millions)	AOCI gains/ (losses) as at November 1, 2021	Net gains/ (losses) recognized in OCI	Amount reclassified to net income as the hedged item affects net income[1]	AOCI gains/ (losses) as at October 31, 2022	Balance in cash flow hedge reserve/unrealized foreign currency translation account as at October 31, 2022 Active hedges	Discontinued hedges
Cash flow hedges						
Interest rate risk	**$ (456)**	**$ (4,204)**	**$ 1,202**	**$ (3,458)**	**$ (3,526)**	**$ 68**
Foreign currency/interest rate risk	**(9)**	**(4,294)**	**2,428**	**(1,875)**	**(2,003)**	**128**
Foreign currency risk	**43**	**(1,405)**	**181**	**(1,181)**	**(1,179)**	**(2)**
Equity risk	**61**	**(134)**	**69**	**(4)**	**(4)**	**–**
	(361)	**(10,037)**	**3,880**	**(6,518)**	**(6,712)**	**194**
Net investment hedges						
Foreign currency risk	**(1,829)**	**(1,917)**	**262**	**(3,484)**	**(3,387)**	**(97)**
Total	**$ (2,190)**	**$ (11,954)**	**$ 4,142**	**$ (10,002)**	**$ (10,099)**	**$ 97**

(1) Amounts reclassified from the cash flow hedge and net investment hedge reserves to net income are recorded innon-interest income-other except for amortization, which is recorded in interest income.

For the year ended October 31, 2021 ($ millions)	AOCI gains/ (losses) as at November 1, 2020	Net gains/ (losses) recognized in OCI	Amount reclassified to net income as the hedged item affects net income[1]	AOCI gains/ (losses) as at October 31, 2021	Balance in cash flow hedge reserve/unrealized foreign currency translation account as at October 31, 2021 Active hedges	Discontinued hedges
Cash flow hedges						
Interest rate risk	$ 412	$ (1,033)	$ 165	$ (456)	$ (991)	$ 535
Foreign currency/interest rate risk	1,054	1,434	(2,497)	(9)	(192)	183
Foreign currency risk	(706)	(1,998)	2,747	43	31	12
Equity risk	(30)	330	(239)	61	61	–
	730	(1,267)	176	(361)	(1,091)	730
Net investment hedges						
Foreign currency risk	(3,136)	1,276	31	(1,829)	(1,726)	(103)
Total	$ (2,406)	$ 9	$ 207	$ (2,190)	$ (2,817)	$ 627

(1) Amounts reclassified from the cash flow hedge and net investment hedge reserves to net income are recorded innon-interest income-other.

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, 2022 ($ millions)

Types of financial assets	Gross amounts of recognized financial instruments	Gross amounts of recognized financial instruments offset in the Consolidated Statement of Financial Position	Net amounts of financial instruments presented in the Consolidated Statement of Financial Position	Related amounts not offset in the Consolidated Statement of Financial Position		Net amount[3]
				Impact of master netting arrangements or similar agreements[1]	Collateral[2][4]	
Derivative financial instruments	**$ 55,775**	**$ (76)**	**$ 55,699**	**$ (36,519)**	**$ (6,132)**	**$ 13,048**
Securities purchased under resale agreements and securities borrowed	**230,893**	**(55,580)**	**175,313**	**(16,173)**	**(151,417)**	**7,723**
Total	**$ 286,668**	**$ (55,656)**	**$ 231,012**	**$ (52,692)**	**$ (157,549)**	**$ 20,771**
Types of financial liabilities						
Derivative financial instruments	**$ 65,976**	**$ (76)**	**$ 65,900**	**$ (36,519)**	**$ (17,484)**	**$ 11,897**
Obligations related to securities sold under repurchase agreements and securities lent	**194,605**	**(55,580)**	**139,025**	**(16,173)**	**(118,559)**	**4,293**
Total	**$ 260,581**	**$ (55,656)**	**$ 204,925**	**$ (52,692)**	**$ (136,043)**	**$ 16,190**

As at October 31, 2021 ($ millions)

Types of financial assets	Gross amounts of recognized financial instruments	Gross amounts of recognized financial instruments offset in the Consolidated Statement of Financial Position	Net amounts of financial instruments presented in the Consolidated Statement of Financial Position	Related amounts not offset in the Consolidated statement of Financial Position		Net amount[3]
				Impact of master netting arrangements or similar agreements[1]	Collateral[2]	
Derivative financial instruments	$ 42,489	$ (187)	$ 42,302	$ (25,293)	$ (3,608)	$ 13,401
Securities purchased under resale agreements and securities borrowed	160,621	(32,882)	127,739	(14,823)	(109,981)	2,935
Total	$ 203,110	$ (33,069)	$ 170,041	$ (40,116)	$ (113,589)	$ 16,336
Types of financial liabilities						
Derivative financial instruments	$ 42,390	$ (187)	$ 42,203	$ (25,293)	$ (6,489)	$ 10,421
Obligations related to securities sold under repurchase agreements and securities lent	156,351	(32,882)	123,469	(14,823)	(103,340)	5,306
Total	$ 198,741	$ (33,069)	$ 165,672	$ (40,116)	$ (109,829)	$ 15,727

(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) Derivative financial instruments assets include cash collateral of$4,271 million and non-cash collateral of $1,861 million. Derivative financial instruments liabilities include cash collateral of $17,215 million and non-cash collateral of $269 million.

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12 Investment Securities

The following table presents the carrying amounts of the Bank's investment securities per measurement category.

As at October 31 ($ millions)	2022	2021
Debt investment securities measured at FVOCI	**$ 81,271**	$ 52,611
Debt investment securities measured at amortized cost	**23,610**	18,157
Equity investment securities designated at FVOCI	**3,439**	3,178
Equity investment securities measured at FVTPL	**1,626**	1,223
Debt investment securities measured at FVTPL	**62**	30
Total investment securities	**$ 110,008**	$ 75,199

(a) Debt investment securities measured at fair value through other comprehensive income (FVOCI)

	2022				2021			
As at October 31 ($ millions)	Cost	Gross unrealized gains	Gross unrealized losses	Fair value	Cost	Gross unrealized gains	Gross unrealized losses	Fair value
Canadian federal government issued or guaranteed debt	**$ 11,372**	**$ 4**	**$ 374**	**$ 11,002**	$ 5,694	$ 135	$ 25	$ 5,804
Canadian provincial and municipal debt	**5,860**	**1**	**432**	**5,429**	5,202	12	59	5,155
U.S. treasury and other U.S. agency debt	**37,690**	**80**	**2,534**	**35,236**	13,528	188	79	13,637
Other foreign government debt	**28,794**	**27**	**1,135**	**27,686**	27,126	60	515	26,671
Other debt	**1,989**	**1**	**72**	**1,918**	1,339	9	4	1,344
Total	**$ 85,705**	**$ 113**	**$ 4,547**	**$ 81,271**	$ 52,889	$ 404	$ 682	$ 52,611

(b) Debt investment securities measured at amortized cost

	2022		2021	
As at October 31 ($ millions)	Fair Value	Carrying value[1]	Fair Value	Carrying value[1]
Canadian federal and provincial government issued or guaranteed debt	**$ 8,684**	**$ 9,024**	$ 12,310	$ 12,372
U.S. treasury and other U.S. agency debt	**12,212**	**13,042**	4,712	4,687
Other foreign government debt	**1,459**	**1,470**	970	960
Corporate debt	**88**	**74**	141	138
Total	**$ 22,443**	**$ 23,610**	$ 18,133	$ 18,157

(1) Balances are net of allowances of $1 (2021 were not significant).

(c) Equity investment securities designated at fair value through other comprehensive income (FVOCI)

The Bank has designated certain equity securities at FVOCI shown in the following table as these investments are held for strategic purposes.

As at October 31, 2022 ($ millions)	Cost	Gross unrealized gains	Gross unrealized losses	Fair value
Preferred equity instruments	**$ –**	**$ –**	**$ –**	**$ –**
Common shares	**3,175**	**487**	**223**	**3,439**
Total	**$ 3,175**	**$ 487**	**$ 223**	**$ 3,439**

As at October 31, 2021 ($ millions)	Cost	Gross unrealized gains	Gross unrealized losses	Fair value
Preferred equity instruments	$ 27	$ 4	$ 3	$ 28
Common shares	2,710	528	88	3,150
Total	$ 2,737	$ 532	$ 91	$ 3,178

Dividend income on equity securities designated at FVOCI of $167 million for the year ended October 31, 2022 (2021 – $111 million) has been recognized in interest income.

During the year ended October 31, 2022, the Bank has disposed of certain equity securities designated at FVOCI with a fair value of $958 million (2021 – $1,291 million). These dispositions have resulted in a cumulative gain of $67 million (2021 – gain of $204 million) that remains in OCI.

(d) An analysis of the carrying value of investment securities is as follows:

As at October 31, 2022 ($ 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
Fair value through other comprehensive income							
Debt instruments							
Canadian federal government issued or guaranteed debt	$ 2,617	$ 2,125	$ 4,700	$ 675	$ 885	$ –	$ 11,002
Yield[1] %	*1.0*	*2.7*	*2.2*	*2.1*	*0.2*	*–*	*1.9*
Canadian provincial and municipal debt	372	688	2,537	1,832	–	–	5,429
Yield[1] %	*1.2*	*1.8*	*2.1*	*2.5*	*–*	*–*	*2.1*
U.S. treasury and other U.S. agency debt	762	8,665	19,695	3,295	2,819	–	35,236
Yield[1] %	*2.7*	*1.1*	*2.2*	*2.7*	*2.5*	*–*	*2.0*
Other foreign government debt	6,994	7,325	9,281	3,817	269	–	27,686
Yield[1] %	*2.1*	*2.2*	*4.3*	*5.0*	*3.4*	*–*	*3.3*
Other debt	70	101	1,527	214	3	3	1,918
Yield[1] %	*9.8*	*2.8*	*4.3*	*3.0*	*5.9*	*4.0*	*4.3*
	10,815	18,904	37,740	9,833	3,976	3	81,271
Equity instruments							
Preferred equity instruments	–	–	–	–	–	–	–
Common shares	–	–	–	–	–	3,439	3,439
						3,439	3,439
Total FVOCI	10,815	18,904	37,740	9,833	3,976	3,442	84,710
Amortized cost							
Canadian federal and provincial government issued or guaranteed debt	682	1,867	6,104	367	4	–	9,024
Yield[1] %	*1.0*	*3.1*	*2.9*	*7.2*	*0.0*	*–*	*3.1*
U.S. treasury and other U.S. agency debt	–	812	149	7	12,074	–	13,042
Yield[1] %	*–*	*1.3*	*3.1*	*4.0*	*3.5*	*–*	*3.4*
Other foreign government debt	81	382	827	138	43	–	1,471
Yield[1] %	*2.6*	*7.4*	*4.5*	*2.2*	*1.3*	*–*	*4.8*
Corporate debt	2	52	(10)	29	–	–	73
Yield[1] %	*2.7*	*3.0*	*3.9*	*2.6*	*–*	*–*	*2.9*
	765	3,113	7,070	541	12,121	–	23,610
Fair value through profit or loss							
Equity instruments	–	–	–	–	–	1,626	1,626
Debt instruments	–	–	54	8	–	–	62
Total investment securities	$ 11,580	$ 22,017	$ 44,864	$ 10,382	$ 16,097	$ 5,068	$ 110,008
Total by currency (in Canadian equivalent):							
Canadian dollar	$ 3,546	$ 3,968	$ 12,560	$ 2,440	$ 900	$ 2,796	$ 26,210
U.S. dollar	1,031	11,856	24,810	4,921	14,866	1,998	59,482
Mexican peso	193	496	2,695	485	–	35	3,904
Other currencies	6,810	5,697	4,799	2,536	331	239	20,412
Total investment securities	$ 11,580	$ 22,017	$ 44,864	$ 10,382	$ 16,097	$ 5,068	$ 110,008

(1) Represents the weighted-average yield of fixed income securities.

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As at October 31, 2021 ($ 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
Fair value through other comprehensive income							
Debt instruments							
Canadian federal government issued or guaranteed debt	$ 70	$ 474	$ 3,717	$ 323	$ 1,220	$ –	$ 5,804
Yield[1] %	*0.1*	*0.8*	*0.9*	*1.7*	*2.9*	–	*1.3*
Canadian provincial and municipal debt	170	1,248	2,239	1,498	–	–	5,155
Yield[1] %	*0.5*	*0.6*	*1.0*	*1.8*	–	–	*1.1*
U.S. treasury and other U.S. agency debt	147	449	10,786	88	2,167	–	13,637
Yield[1] %	0.1	*0.1*	*1.2*	*1.4*	*1.4*	–	*1.2*
Other foreign government debt	7,445	7,411	9,418	2,077	320	–	26,671
Yield[1] %	*1.0*	*1.3*	*2.2*	*2.8*	*2.8*	–	*1.7*
Other debt	78	284	838	129	15	–	1,344
Yield[1] %	*0.6*	*1.9*	*1.8*	*0.1*	*5.9*	–	*1.6*
	7,910	9,866	26,998	4,115	3,722	–	52,611
Equity instruments							
Preferred equity instruments	–	–	–	–	–	28	28
Common shares	–	–	–	–	–	3,150	3,150
						3,178	3,178
Total FVOCI	7,910	9,866	26,998	4,115	3,722	3,178	55,789
Amortized cost							
Canadian federal and provincial government issued or guaranteed debt	499	3,405	8,061	402	5	–	12,372
Yield[1] %	*1.9*	*1.7*	*1.8*	*3.0*	*0.0*	–	*1.9*
U.S. treasury and other U.S. agency debt	12	–	750	8	3,917	–	4,687
Yield[1] %	*0.1*	–	*1.3*	*2.2*	*2.1*	–	*1.9*
Other foreign government debt	74	245	329	258	54	–	960
Yield[1] %	*(0.0)*	*(0.4)*	*3.4*	*1.1*	*1.2*	–	*1.4*
Corporate debt	9	37	56	36	–	–	138
Yield[1] %	*2.1*	*1.8*	*1.9*	*2.7*	–	–	*2.1*
	594	3,687	9,196	704	3,976	–	18,157
Fair value through profit or loss							
Equity instruments	–	–	–	–	–	1,223	1,223
Debt instruments	–	–	22	8	–	–	30
Total investment securities	$ 8,504	$ 13,553	$ 36,216	$ 4,827	$ 7,698	$ 4,401	$ 75,199
Total by currency (in Canadian equivalent):							
Canadian dollar	$ 337	$ 4,102	$ 13,445	$ 2,296	$ 1,240	$ 2,216	$ 23,636
U.S. dollar	705	3,070	16,333	924	6,090	1,911	29,033
Mexican peso	276	919	1,858	157	–	29	3,239
Other currencies	7,186	5,462	4,580	1,450	368	245	19,291
Total investment securities	$ 8,504	$ 13,553	$ 36,216	$ 4,827	$ 7,698	$ 4,401	$ 75,199

(1) Represents the weighted-average yield of fixed income securities.

(e) 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)	2022	2021
Debt investment securities measured at amortized cost	**$ –**	$ 53
Debt investment securities measured at FVOCI	**74**	366
Net gain on sale of investment securities	**$ 74**	$ 419

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13 Loans, Impaired Loans and Allowance for Credit Losses

(a) Loans at amortized cost

As at October 31 ($ millions)	2022 Gross loans	2022 Allowance for credit losses	2022 Net carrying amount	2021 Gross loans	2021 Allowance for credit losses	2021 Net carrying amount
Residential mortgages	**$ 349,279**	**$ 899**	**$ 348,380**	$ 319,678	$ 802	$ 318,876
Personal loans	**99,431**	**2,137**	**97,294**	91,540	2,341	89,199
Credit cards	**14,518**	**1,083**	**13,435**	12,450	1,211	11,239
Business and government	**287,107**	**1,229**	**285,878**	218,944	1,272	217,672
Total	**$ 750,335**	**$ 5,348**	**$ 744,987**	$ 642,612	$ 5,626	$ 636,986

(b) Loans and acceptances outstanding by geography[1]

As at October 31 ($ millions)	2022	2021
Canada:		
Residential mortgages	**$ 302,486**	$ 280,169
Personal loans	**78,427**	73,592
Credit cards	**6,970**	6,213
Business and government	**105,277**	77,353
	493,160	437,327
United States:		
Personal loans	**2,830**	1,137
Business and government	**66,680**	42,295
	69,510	43,432
Mexico:		
Residential mortgages	**13,080**	9,826
Personal loans	**2,556**	2,454
Credit cards	**675**	540
Business and government	**23,744**	18,902
	40,055	31,722
Chile:		
Residential mortgages	**19,441**	17,176
Personal loans	**4,766**	4,680
Credit cards	**2,921**	2,299
Business and government	**24,197**	20,806
	51,325	44,961
Peru:		
Residential mortgages	**3,719**	2,894
Personal loans	**5,025**	4,536
Credit cards	**942**	467
Business and government	**12,819**	11,511
	22,505	19,408
Colombia:		
Residential mortgages	**1,910**	2,222
Personal loans	**2,115**	1,967
Credit cards	**1,443**	1,608
Business and government	**5,541**	6,205
	11,009	12,002
Other International:		
Residential mortgages	**8,643**	7,391
Personal loans	**3,712**	3,174
Credit cards	**1,568**	1,323
Business and government	**48,848**	41,872
	62,771	53,760
Total loans	**750,335**	642,612
Acceptances[2]	**19,494**	20,404
Total loans and acceptances[3]	**769,829**	663,016
Allowance for credit losses	**(5,379)**	(5,663)
Total loans and acceptances net of allowance for credit losses	**$ 764,450**	$ 657,353

(1) Geographic segmentation is based on the location of the property for residential mortgages; otherwise, the residence of the borrower.
(2) 0.4% of acceptances reside outside Canada (October 31, 2021 – 1.2%).
(3) Loans and acceptances denominated in US dollars were $158,715 (2021 – $112,919), in Chilean pesos $39,418 (2021 – $36,126), Mexican pesos $29,194 (2021 – $23,363), and in other foreign currencies $51,445 (2021 – $46,403).

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(c) Loan maturities

As at October 31, 2022	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	**$ 41,557**	**$ 269,576**	**$ 13,011**	**$ 24,487**	**$ 648**	**$ 349,279**	**$ 114,060**	**$ 232,519**	**$ 2,700**	**$ 349,279**
Personal loans	**15,772**	**37,279**	**5,328**	**1,282**	**39,770**	**99,431**	**41,883**	**56,707**	**841**	**99,431**
Credit cards	**–**	**–**	**–**	**–**	**14,518**	**14,518**	**–**	**14,518**	**–**	**14,518**
Business and government	**148,094**	**128,114**	**5,334**	**386**	**5,179**	**287,107**	**166,236**	**119,361**	**1,510**	**287,107**
Total	**$ 205,423**	**$ 434,969**	**$ 23,673**	**$ 26,155**	**$ 60,115**	**$ 750,335**	**$ 322,179**	**$ 423,105**	**$ 5,051**	**$ 750,335**
Allowance for credit losses	**–**	**–**	**–**	**–**	**(5,348)**	**(5,348)**	**–**	**–**	**(5,348)**	**(5,348)**
Total loans net of allowance for credit losses	**$ 205,423**	**$ 434,969**	**$ 23,673**	**$ 26,155**	**$ 54,767**	**$ 744,987**	**$ 322,179**	**$ 423,105**	**$ (297)**	**$ 744,987**

As at October 31, 2021	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	$ 38,886	$ 247,343	$ 12,112	$ 19,417	$ 1,920	$ 319,678	$ 83,578	$ 233,217	$ 2,883	$ 319,678
Personal loans	15,057	33,414	5,047	1,180	36,842	91,540	37,254	53,374	912	91,540
Credit cards	–	–	–	–	12,450	12,450	–	12,450	–	12,450
Business and government	108,405	100,319	4,973	230	5,017	218,944	120,313	96,546	2,085	218,944
Total	$ 162,348	$ 381,076	$ 22,132	$ 20,827	$ 56,229	$ 642,612	$ 241,145	$ 395,587	$ 5,880	$ 642,612
Allowance for credit losses	–	–	–	–	(5,626)	(5,626)	–	–	(5,626)	(5,626)
Total loans net of allowance for credit losses	$ 162,348	$ 381,076	$ 22,132	$ 20,827	$ 50,603	$ 636,986	$ 241,145	$ 395,587	$ 254	$ 636,986

(d) Impaired loans[1][2]

	2022			2021		
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	**$ 1,386**	**$ 406**	**$ 980**	$ 1,331	$ 374	$ 957
Personal loans	**848**	**551**	**297**	833	626	207
Credit cards	**–**	**–**	**–**	–	–	–
Business and government	**2,552**	**678**	**1,874**	2,292	655	1,637
Total	**$ 4,786**	**$ 1,635**	**$ 3,151**	$ 4,456	$ 1,655	$ 2,801
By geography:						
Canada	**$ 1,054**	**$ 440**	**$ 614**	$ 1,090	$ 446	$ 644
United States	**–**	**–**	**–**	24	4	20
Mexico	**1,020**	**294**	**726**	758	269	489
Peru	**761**	**352**	**409**	699	350	349
Chile	**740**	**202**	**538**	512	180	332
Colombia	**301**	**67**	**234**	418	88	330
Other International	**910**	**280**	**630**	955	318	637
Total	**$ 4,786**	**$ 1,635**	**$ 3,151**	$ 4,456	$ 1,655	$ 2,801

(1) Interest income recognized on impaired loans during the year ended October 31, 2022 was $144 (2021 – $153).
(2) Additional interest income of approximately $274 would have been recorded if the above loans had not been classified as impaired (2021 – $270).

(e) Allowance for credit losses

(i) Key inputs and assumptions

The Bank's allowance for credit losses is measured using a three-stage approach based on the extent of credit deterioration since origination. The calculation of the Bank's allowance for credit losses is an output of complex models with a number of underlying assumptions regarding the choice of variable inputs and their interdependencies. 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.

The Bank determines its allowance for credit losses using four probability-weighted forward-looking scenarios (base case, optimistic, pessimistic and very pessimistic).

The Bank considers both internal and external sources of information and data to achieve unbiased projections and forecasts in determining the allowance for credit losses. The Bank prepares the scenarios using forecasts generated by Scotiabank Economics (SE). The forecasts are generated using models whose outputs are modified by SE as necessary to formulate a 'base case' view of the most probable future direction of economic developments. The development of the base case and alternative scenarios is overseen by a governance committee that consists of internal stakeholders from across the Bank. The final base case and alternative scenarios reflect significant review and oversight, and incorporate judgment both in the determination of the scenarios' forecasts and the probability weights that are assigned to them.

(ii) Key macroeconomic variables

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. Qualitative adjustments or overlays may be made for certain portfolios or geographies as temporary adjustments in circumstances where, in the Bank's view, the inputs, assumptions, and/or modelling techniques do not capture all relevant risk factors, including the emergence of economic or geopolitical events up to the date of financial statements.

The Bank has applied expert credit judgement in the assessment of underlying credit deterioration and migration of balances to progressive stages. The Bank considered both quantitative and qualitative information in the assessment of significant increase in credit risk.

The Bank's models are calibrated to consider past performance and macroeconomic forward-looking variables as inputs. The Bank has generated a forward-looking base case scenario and three alternate forward-looking scenarios (one optimistic and two pessimistic) as key inputs into the expected credit loss provisioning models. The global economic outlook has deteriorated over the last year owing to the combined impacts of central bank efforts to tame inflation, the consequences of Russia's war on Ukraine, pandemic management in China and the impact of higher energy prices. Concerns about potential slowdown and high inflation have led to very volatile financial markets, which have clouded the outlook further. Therefore, the base case scenario is less favourable this year. Relative to the base case, the optimistic scenario features somewhat stronger economic activity. The two pessimistic scenarios were updated around the potential risk of stagflation and recession.

In light of current economic uncertainty, the pessimistic scenarios feature a protracted period of high commodity prices, elevated financial market uncertainty and a further disruption to supply chains. All these elements lead to much higher inflation compared to the base case scenario resulting in a rapid deceleration of growth. In the pessimistic scenario, stagflation is short-lived, while in the very pessimistic scenario, the stagflation shock is strong and persists for a longer period of time.

The Bank increased the weight of the pessimistic scenarios in calculating the allowance for credit losses on performing loans to capture the elevated downside risk and uncertainty to the outlook.

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The following tables show certain key macroeconomic variables used to calculate the modelled estimate for the allowance for credit losses. Further changes in these variables up to the date of the financial statements is incorporated through expert credit judgment. 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		Alternative Scenario – Very Pessimistic	
October 31, 2022	Next 12 Months	Remaining Forecast Period	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	**1.2**	**2.1**	**2.4**	**3.1**	**-4.8**	**3.7**	**-5.9**	**2.6**
Consumer price index, y/y %	**4.9**	**2.1**	**5.2**	**2.6**	**9.3**	**2.3**	**12.5**	**9.5**
Unemployment rate, average %	**5.7**	**6.0**	**5.1**	**4.7**	**9.7**	**6.9**	**10.2**	**8.6**
Bank of Canada overnight rate target, average %	**3.8**	**2.7**	**4.2**	**4.1**	**5.1**	**3.2**	**5.1**	**3.7**
HPI – Housing Price Index, y/y % change	**-12.3**	**-0.3**	**-9.7**	**1.6**	**-17.6**	**-0.3**	**-20.0**	**-1.3**
USDCAD exchange rate, average	**1.27**	**1.24**	**1.26**	**1.23**	**1.28**	**1.24**	**1.28**	**1.25**
US								
Real GDP growth, y/y % change	**0.6**	**2.1**	**1.3**	**3.0**	**-5.1**	**3.7**	**-6.5**	**3.3**
Consumer price index, y/y %	**5.4**	**2.4**	**5.8**	**2.8**	**10.0**	**2.6**	**13.2**	**10.1**
Target federal funds rate, upper limit, average %	**3.5**	**2.7**	**4.7**	**4.5**	**4.8**	**3.3**	**4.8**	**3.7**
Unemployment rate, average %	**4.3**	**5.0**	**4.2**	**4.6**	**7.9**	**5.7**	**8.3**	**6.7**
Mexico								
Real GDP growth, y/y % change	**1.4**	**2.6**	**1.9**	**3.5**	**-4.0**	**4.0**	**-5.1**	**2.5**
Unemployment rate, average %	**3.8**	**3.9**	**3.7**	**3.2**	**7.2**	**4.8**	**7.6**	**6.4**
Chile								
Real GDP growth, y/y % change	**-2.0**	**2.4**	**-0.8**	**3.6**	**-7.3**	**3.9**	**-8.4**	**2.9**
Unemployment rate, average %	**8.6**	**7.6**	**8.0**	**6.5**	**12.2**	**8.3**	**12.9**	**9.0**
Peru								
Real GDP growth, y/y % change	**2.5**	**2.7**	**3.7**	**3.8**	**-1.0**	**4.1**	**-3.3**	**3.5**
Unemployment rate, average %	**7.0**	**6.9**	**6.0**	**4.7**	**10.3**	**7.6**	**11.4**	**9.2**
Colombia								
Real GDP growth, y/y % change	**3.9**	**2.6**	**6.5**	**3.6**	**0.4**	**4.0**	**-2.0**	**3.4**
Unemployment rate, average %	**10.7**	**9.9**	**9.0**	**6.7**	**14.0**	**10.7**	**15.1**	**12.3**
Caribbean								
Real GDP growth, y/y % change	**4.4**	**4.0**	**5.0**	**4.9**	**0.5**	**5.2**	**-1.0**	**3.8**
Global								
WTI oil price, average USD/bbl	**89**	**79**	**95**	**96**	**116**	**83**	**125**	**116**
Copper price, average USD/lb	**3.25**	**3.49**	**3.39**	**3.95**	**3.66**	**3.54**	**3.78**	**3.78**
Global GDP, y/y % change	**2.02**	**2.83**	**2.96**	**3.83**	**-3.05**	**4.23**	**-4.14**	**3.79**

October 31, 2021	Base Case Scenario		Alternative Scenario – Optimistic		Alternative Scenario – Pessimistic		Alternative Scenario – Very Pessimistic	
	Next 12 Months	Remaining Forecast Period	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	3.4	1.9	5.3	2.8	-1.3	3.1	-7.4	4.3
Consumer price index, y/y %	3.0	2.4	3.4	3.5	2.0	1.8	1.6	1.2
Unemployment rate, average %	6.3	5.7	5.6	4.1	8.8	6.3	11.7	8.2
Bank of Canada overnight rate target, average %	0.3	2.0	0.9	3.6	0.3	1.2	0.3	0.5
HPI – Housing Price Index, y/y % change	11.1	2.1	13.2	3.9	3.9	3.3	-2.7	3.9
USDCAD exchange rate, average	1.24	1.21	1.23	1.20	1.28	1.21	1.30	1.24
US								
Real GDP growth, y/y % change	5.7	1.6	7.3	2.1	2.4	2.4	-1.4	3.5
Consumer price index, y/y %	4.0	2.5	4.5	3.1	3.3	2.3	2.6	1.9
Target federal funds rate, upper limit, average %	0.3	1.8	0.8	2.8	0.3	1.1	0.3	0.9
Unemployment rate, average %	3.8	3.5	3.4	3.2	5.6	4.1	6.8	5.6
Mexico								
Real GDP growth, y/y % change	2.8	1.9	4.3	2.7	-0.4	2.7	-4.2	3.8
Unemployment rate, average %	4.0	4.0	3.6	3.1	6.5	4.5	9.4	6.4
Chile								
Real GDP growth, y/y % change	6.7	2.2	8.8	3.1	3.4	3.1	-0.5	4.2
Unemployment rate, average %	6.5	6.2	5.9	5.6	9.0	6.7	12.0	8.6
Peru								
Real GDP growth, y/y % change	5.0	3.2	7.7	4.3	3.6	3.7	0.0	4.7
Unemployment rate, average %	8.8	7.5	6.0	3.4	10.8	8.1	13.8	10.0
Colombia								
Real GDP growth, y/y % change	5.0	3.5	6.8	4.8	3.6	4.0	0.0	5.0
Unemployment rate, average %	13.7	11.2	12.0	8.2	15.6	11.8	18.6	13.7
Caribbean								
Real GDP growth, y/y % change	4.9	4.1	6.2	4.9	3.9	4.6	0.3	5.6
Global								
WTI oil price, average USD/bbl	69	70	75	86	61	67	57	57
Copper price, average USD/lb	4.20	4.20	4.36	4.78	3.93	4.05	3.81	3.62
Global GDP, y/y % change	5.07	3.02	6.54	3.90	2.44	3.68	-0.69	4.48

(iii) Sensitivity

The weighting of these multiple scenarios increased our reported allowance for credit losses for financial assets in Stage 1 and Stage 2, relative to our base case scenario, to $3,847 million (2021 – $4,076 million) from $3,609 million (2021 – $3,998 million). If we were to only use our very pessimistic scenario for the measurement of allowance for credit losses for such assets, our allowance for credit losses on performing financial instruments would be $1,096 million higher than the reported allowance for credit losses as at October 31, 2022 (2021 – $866 million). Actual results will differ as this does not consider the migration of exposures or incorporate changes that would occur in the portfolio due to risk mitigation actions and other factors.

Under our current probability-weighted scenarios, if all of our performing financial assets were in Stage 1, reflecting a 12 month expected loss period, the allowance for credit losses would be $521 million (2021 – $407 million) lower than the reported allowance for credit losses on performing financial assets.

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(iv) Allowance for credit losses

($ millions)	Balance as at November 1, 2021	Provision for credit losses	Net write-offs	Other, including foreign currency adjustment	Balance as at October 31, 2022
Residential mortgages	**$ 802**	**$ 85**	**$ (45)**	**$ 57**	**$ 899**
Personal loans	**2,341**	**615**	**(863)**	**44**	**2,137**
Credit cards	**1,211**	**469**	**(612)**	**15**	**1,083**
Business and government	**1,374**	**213**	(206)	**(13)**	**1,368**
	$ 5,728	**$ 1,382**	**$ (1,726)**	**$ 103**	**$ 5,487**
Presented as:					
Allowance for credit losses on loans	**$ 5,626**				**$ 5,348**
Allowance for credit losses on acceptances	**37**				**31**
Allowance for credit losses on off-balance sheet exposures	**65**				**108**

($ millions)	Balance as at November 1, 2020	Provision for credit losses	Net write-offs	Other, including foreign currency adjustment	Balance as at October 31, 2021
Residential mortgages	$ 884	$ 91	$ (84)	$ (89)	$ 802
Personal loans	3,155	928	(1,559)	(183)	2,341
Credit cards	1,886	772	(1,340)	(107)	1,211
Business and government	1,892	17	(375)	(160)	1,374
	$ 7,817	$ 1,808	$ (3,358)	$ (539)	$ 5,728
Presented as:					
Allowance for credit losses on loans	$ 7,639				$ 5,626
Allowance for credit losses on acceptances	77				37
Allowance for credit losses on off-balance sheet exposures	101				65

Allowancefor credit losses on loans

As at October 31, 2022 ($ millions)	Stage 1	Stage 2	Stage 3	Total
Residential mortgages	**$ 197**	**$ 296**	**$ 406**	**$ 899**
Personal loans	**665**	**921**	**551**	**2,137**
Credit cards	**436**	**647**	**–**	**1,083**
Business and government	**255**	**296**	**678**	**1,229**
Total[1]	**$ 1,553**	**$ 2,160**	**$ 1,635**	**$ 5,348**

(1) Excludes allowance for credit losses for other financial assets including acceptances, investment securities, deposits with banks, off-balance sheet credit risks and reverse repos which amounted to $151.

As at October 31, 2021 ($ millions)	Stage 1	Stage 2	Stage 3	Total
Residential mortgages	$ 152	$ 276	$ 374	$ 802
Personal loans	644	1,071	626	2,341
Credit cards	352	859	–	1,211
Business and government	186	431	655	1,272
Total[1]	$ 1,334	$ 2,637	$ 1,655	$ 5,626

(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 $105.

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The following table presents the changes to the allowance for credit losses on loans.

($ millions)	As at October 31, 2022 Stage 1	Stage 2	Stage 3	Total	As at October 31, 2021 Stage 1	Stage 2	Stage 3	Total
Residential mortgages								
Balance at beginning of the year	**$ 152**	**$ 276**	**$ 374**	**$ 802**	$ 190	$ 302	$ 392	$ 884
Provision for credit losses								
Remeasurement[1]	**(54)**	**43**	**80**	**69**	(143)	70	149	76
Newly originated or purchased financial assets	**34**	**–**	**–**	**34**	49	–	–	49
Derecognition of financial assets and maturities	**(5)**	**(13)**	**–**	**(18)**	(10)	(24)	–	(34)
Changes in models and methodologies	**–**	**–**	**–**	**–**	–	–	–	–
Transfer to (from):								
Stage 1	**65**	**(52)**	**(13)**	**–**	88	(74)	(14)	–
Stage 2	**(9)**	**46**	**(37)**	**–**	(12)	62	(50)	–
Stage 3	**–**	**(19)**	**19**	**–**	–	(32)	32	–
Gross write-offs	**–**	**–**	**(73)**	**(73)**	–	–	(111)	(111)
Recoveries	**–**	**–**	**28**	**28**	–	–	27	27
Foreign exchange and other movements[6]	**14**	**15**	**28**	**57**	(10)	(28)	(51)	(89)
Balance at end of year[2]	**$ 197**	**$ 296**	**$ 406**	**$ 899**	$ 152	$ 276	$ 374	$ 802
Personal loans								
Balance at beginning of the year	**$ 644**	**$1,071**	**$ 626**	**$ 2,341**	$ 864	$ 1,471	$ 820	$ 3,155
Provision for credit losses								
Remeasurement[1]	**(579)**	**441**	**609**	**471**	(1,119)	1,023	984	888
Newly originated or purchased financial assets	**338**	**–**	**–**	**338**	525	–	–	525
Derecognition of financial assets and maturities	**(76)**	**(118)**	**–**	**(194)**	(171)	(314)	–	(485)
Changes in models and methodologies	**–**	**–**	**–**	**–**	–	–	–	–
Transfer to (from):								
Stage 1	**467**	**(457)**	**(10)**	**–**	882	(869)	(13)	–
Stage 2	**(133)**	**192**	**(59)**	**–**	(253)	325	(72)	–
Stage 3	**(5)**	**(221)**	**226**	**–**	(43)	(487)	530	–
Gross write-offs	**–**	**–**	**(1,116)**	**(1,116)**	–	–	(1,833)	(1,833)
Recoveries	**–**	**–**	**253**	**253**	–	–	274	274
Foreign exchange and other movements[6]	**9**	**13**	**22**	**44**	(41)	(78)	(64)	(183)
Balance at end of year[2]	**$ 665**	**$ 921**	**$ 551**	**$ 2,137**	$ 644	$ 1,071	$ 626	$ 2,341
Credit cards								
Balance at beginning of the year	**$ 352**	**$ 859**	**$ –**	**$ 1,211**	$ 501	$ 1,385	$ –	$ 1,886
Provision for credit losses								
Remeasurement[1]	**(176)**	**141**	**449**	**414**	(452)	299	972	819
Newly originated or purchased financial assets	**146**	**–**	**–**	**146**	117	–	–	117
Derecognition of financial assets and maturities	**(51)**	**(40)**	**–**	**(91)**	(70)	(94)	–	(164)
Changes in models and methodologies	**–**	**–**	**–**	**–**	–	–	–	–
Transfer to (from):								
Stage 1	**240**	**(240)**	**–**	**–**	382	(382)	–	–
Stage 2	**(77)**	**77**	**–**	**–**	(103)	103	–	–
Stage 3	**–**	**(152)**	**152**	**–**	–	(389)	389	–
Gross write-offs	**–**	**–**	**(791)**	**(791)**	–	–	(1,543)	(1,543)
Recoveries	**–**	**–**	**179**	**179**	–	–	203	203
Foreign exchange and other movements[6]	**2**	**2**	**11**	**15**	(23)	(63)	(21)	(107)
Balance at end of year[2]	**$ 436**	**$ 647**	**$ –**	**$ 1,083**	$ 352	$ 859	$ –	$ 1,211
Total retail loans								
Balance at beginning of the year	**$1,148**	**$2,206**	**$ 1,000**	**$ 4,354**	$ 1,555	$ 3,158	$ 1,212	$ 5,925
Provision for credit losses	**–**	**–**	**–**	**–**	–	–	–	–
Remeasurement[1]	**(809)**	**625**	**1,138**	**954**	(1,714)	1,392	2,105	1,783
Newly originated or purchased financial assets	**518**	**–**	**–**	**518**	691	–	–	691
Derecognition of financial assets and maturities	**(132)**	**(171)**	**–**	**(303)**	(251)	(432)	–	(683)
Changes in models and methodologies	**–**	**–**	**–**	**–**	–	–	–	–
Transfer to (from):	**–**	**–**	**–**	**–**	–	–	–	–
Stage 1	**772**	**(749)**	**(23)**	**–**	1,352	(1,325)	(27)	–
Stage 2	**(219)**	**315**	**(96)**	**–**	(368)	490	(122)	–
Stage 3	**(5)**	**(392)**	**397**	**–**	(43)	(908)	951	–
Gross write-offs	**–**	**–**	**(1,980)**	**(1,980)**	–	–	(3,487)	(3,487)
Recoveries	**–**	**–**	**460**	**460**	–	–	504	504
Foreign exchange and other movements[6]	**25**	**30**	**61**	**116**	(74)	(169)	(136)	(379)
Balance at end of year[2]	**$1,298**	**$1,864**	**$ 957**	**$ 4,119**	$ 1,148	$ 2,206	$ 1,000	$ 4,354
Business and government								
Balance at beginning of the year	**$ 212**	**$ 470**	**$ 655**	**$ 1,337**	$ 478	$ 592	$ 745	$ 1,815
Provision for credit losses								
Remeasurement[1]	**(79)**	**(36)**	**302**	**187**	(262)	11	402	151
Newly originated or purchased financial assets	**310**	**–**	**–**	**310**	325	–	–	325
Derecognition of financial assets and maturities	**(255)**	**(89)**	**(30)**	**(374)**	(320)	(72)	(11)	(403)
Changes in models and methodologies	**30**	57	**–**	87	(4)	(11)	–	(15)
Transfer to (from):								
Stage 1	**118**	**(118)**	**–**	**–**	66	(66)	–	–
Stage 2	**(27)**	**29**	**(2)**	**–**	(53)	54	(1)	–
Stage 3	**–**	**(8)**	**8**	**–**	–	(9)	9	–
Gross write-offs	**–**	**–**	**(318)**	**(318)**	–	–	(414)	(414)
Recoveries	**–**	**–**	**112**	**112**	–	–	39	39
Foreign exchange and other movements	**13**	**15**	**(32)**	**(4)**	(18)	(29)	(114)	(161)
Balance at end of period including off-balance sheet exposures[2]	**$ 322**	**$ 320**	**$ 695**	**$ 1,337**	$ 212	$ 470	$ 655	$ 1,337
Less: Allowance for credits losses on off-balance sheet exposures[2][3]	**67**	**24**	**17**	**108**	26	39	–	65
Balance at end of year[2]	**$ 255**	**$ 296**	**$ 678**	**$ 1,229**	$ 186	$ 431	$ 655	$ 1,272

(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 $374 (2021 – $270).
(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) During the year ended October 31, 2022, the contractual terms of certain financial assets were modified where the modification did not result in derecognition. The carrying value of such loans that were modified in Stage 2 and Stage 3 was $1,567 and $600 respectively, before the modification.
(6) Divestitures are included in the foreign exchange and other movements.

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(f) Carrying value of exposures by risk rating

Residential mortgages Category of PD grades ($ millions)	As at October 31, 2022 Stage 1	 Stage 2	 Stage 3[1]	 Total	As at October 31, 2021 Stage 1	 Stage 2	 Stage 3[1]	 Total
Very low	**$ 208,526**	**$ 635**	**$ –**	**$ 209,161**	$ 187,163	$ 5,610	$ –	$ 192,773
Low	**90,745**	**1,172**	**–**	**91,917**	69,306	1,768	–	71,074
Medium	**18,399**	**1,032**	**–**	**19,431**	9,170	3,690	–	12,860
High	**2,759**	**2,680**	**–**	**5,439**	904	2,284	–	3,188
Very high	**53**	**1,429**	**–**	**1,482**	16	643	–	659
Loans not graded[2]	**19,276**	**1,187**	**–**	**20,463**	34,122	3,671	–	37,793
Default	**–**	**–**	**1,386**	**1,386**	–	–	1,331	1,331
Total	**339,758**	**8,135**	**1,386**	**349,279**	300,681	17,666	1,331	319,678
Allowance for credit losses	**197**	**296**	**406**	**899**	152	276	374	802
Carrying value	**$ 339,561**	**$ 7,839**	**$ 980**	**$ 348,380**	$ 300,529	$ 17,390	$ 957	$ 318,876

(1) Stage 3 includes purchased or originated credit-impaired loans.
(2) Portfolios where the customer account level 'Probability of Default' has not been determined have been included in the 'Loans not graded' category.

Personal loans Category of PD grades ($ millions)	As at October 31, 2022 Stage 1	 Stage 2	 Stage 3[1]	 Total	As at October 31, 2021 Stage 1	 Stage 2	 Stage 3[1]	 Total
Very low	**$ 30,098**	**$ 285**	**$ –**	**$ 30,383**	$ 30,085	$ 168	$ –	$ 30,253
Low	**27,284**	**685**	**–**	**27,969**	25,719	574	–	26,293
Medium	**8,789**	**1,464**	**–**	**10,253**	8,290	1,127	–	9,417
High	**7,059**	**2,275**	**–**	**9,334**	5,686	2,307	–	7,993
Very high	**81**	**1,655**	**–**	**1,736**	82	1,157	–	1,239
Loans not graded[2]	**17,371**	**1,537**	**–**	**18,908**	14,159	1,353	–	15,512
Default	**–**	**–**	**848**	**848**	–	–	833	833
Total	**90,682**	**7,901**	**848**	**99,431**	84,021	6,686	833	91,540
Allowance for credit losses	**665**	**921**	**551**	**2,137**	644	1,071	626	2,341
Carrying value	**$ 90,017**	**$ 6,980**	**$ 297**	**$ 97,294**	$ 83,377	$ 5,615	$ 207	$ 89,199

(1) Stage 3 includes purchased or originated credit-impaired loans.
(2) Portfolios where the customer account level 'Probability of Default' has not been determined have been included in the 'Loans not graded' category.

Credit cards Category of PD grades ($ millions)	As at October 31, 2022 Stage 1	 Stage 2	 Stage 3	 Total	As at October 31, 2021 Stage 1	 Stage 2	 Stage 3	 Total
Very low	**$ 1,813**	**$ 47**	**$ –**	**$ 1,860**	$ 1,517	$ 76	$ –	$ 1,593
Low	**2,756**	**159**	**–**	**2,915**	2,288	135	–	2,423
Medium	**3,434**	**190**	**–**	**3,624**	2,666	166	–	2,832
High	**3,042**	**998**	**–**	**4,040**	2,237	1,225	–	3,462
Very high	**36**	**587**	**–**	**623**	21	509	–	530
Loans not graded[1]	**997**	**459**	**–**	**1,456**	1,158	452	–	1,610
Default	**–**	**–**	**–**	**–**	–	–	–	–
Total	**12,078**	**2,440**	**–**	**14,518**	9,887	2,563	–	12,450
Allowance for credit losses	**436**	**647**	**–**	**1,083**	352	859	–	1,211
Carrying value	**$ 11,642**	**$ 1,793**	**$ –**	**$ 13,435**	$ 9,535	$ 1,704	$ –	$ 11,239

(1) Portfolios where the customer account level 'Probability of Default' has not been determined have been included in the 'Loans not graded' category.

Undrawn loan commitments – Retail Category of PD grades ($ millions)	As at October 31, 2022 Stage 1	 Stage 2	 Stage 3	 Total	As at October 31, 2021 Stage 1	 Stage 2	 Stage 3	 Total
Very low	**$ 98,973**	**$ 6**	**$ –**	**$ 98,979**	$ 88,308	$ 14	$ –	$ 88,322
Low	**19,196**	**9**	**–**	**19,205**	17,880	12	–	17,892
Medium	**7,880**	**44**	**–**	**7,924**	6,858	36	–	6,894
High	**3,700**	**307**	**–**	**4,007**	3,103	745	–	3,848
Very high	**34**	**354**	**–**	**388**	24	212	–	236
Loans not graded[1]	**8,316**	**1,667**	**–**	**9,983**	9,126	2,204	–	11,330
Default	**–**	**–**	**–**	**–**	–	–	–	–
Carrying value	**$ 138,099**	**$ 2,387**	**$ –**	**$ 140,486**	$ 125,299	$ 3,223	$ –	$ 128,522

(1) Portfolios where the customer account level 'Probability of Default' has not been determined have been included in the 'Loans not graded' category.

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Total retail loans

Category of PD grades ($ millions)	As at October 31, 2022 Stage 1	Stage 2	Stage 3(1)	Total	As at October 31, 2021 Stage 1	Stage 2	Stage 3(1)	Total
Very low	$ 339,410	$ 973	$ –	$ 340,383	$ 307,073	$ 5,868	$ –	$ 312,941
Low	139,981	2,025	–	142,006	115,193	2,489	–	117,682
Medium	38,502	2,730	–	41,232	26,984	5,019	–	32,003
High	16,560	6,260	–	22,820	11,930	6,561	–	18,491
Very high	204	4,025	–	4,229	143	2,521	–	2,664
Loans not graded(2)	45,960	4,850	–	50,810	58,565	7,680	–	66,245
Default	–	–	2,234	2,234	–	–	2,164	2,164
Total	580,617	20,863	2,234	603,714	519,888	30,138	2,164	552,190
Allowance for credit losses	1,298	1,864	957	4,119	1,148	2,206	1,000	4,354
Carrying value	$ 579,319	$ 18,999	$ 1,277	$ 599,595	$ 518,740	$ 27,932	$ 1,164	$ 547,836

(1) Stage 3 includes purchased or originated credit-impaired loans.
(2) Portfolios where the customer account level 'Probability of Default' has not been determined have been included in the 'Loans not graded' category.

Business and government loans

Category of PD grades ($ millions)	As at October 31, 2022 Stage 1	Stage 2	Stage 3(1)	Total	As at October 31, 2021 Stage 1	Stage 2	Stage 3(1)	Total
Investment grade	$ 162,696	$ 1,775	$ –	$ 164,471	$ 110,786	$ 892	$ –	$ 111,678
Non-Investment grade	105,251	9,563	–	114,814	91,945	7,570	–	99,515
Watch list	22	2,890	–	2,912	31	3,266	–	3,297
Loans not graded(2)	2,346	12	–	2,358	2,151	11	–	2,162
Default	–	–	2,552	2,552	–	–	2,292	2,292
Total	270,315	14,240	2,552	287,107	204,913	11,739	2,292	218,944
Allowance for credit losses	255	296	678	1,229	186	431	655	1,272
Carrying value	$ 270,060	$ 13,944	$ 1,874	$ 285,878	$ 204,727	$ 11,308	$ 1,637	$ 217,672

(1) Stage 3 includes purchased or originated credit-impaired loans.
(2) Portfolios where the customer account level 'Probability of Default' has not been determined have been included in the 'Loans not graded' category.

Undrawn loan commitments – Business and government

Category of PD grades ($ millions)	As at October 31, 2022 Stage 1	Stage 2	Stage 3(1)	Total	As at October 31, 2021 Stage 1	Stage 2	Stage 3(1)	Total
Investment grade	$ 222,734	$ 1,502	$ –	$ 224,236	$ 186,056	$ 1,266	$ –	$ 187,322
Non-investment grade	62,827	4,534	–	67,361	66,009	3,786	–	69,795
Watch list	4	604	–	608	12	2,160	–	2,172
Loans not graded(2)	4,573	–	–	4,573	4,155	–	–	4,155
Default	–	–	139	139	–	–	102	102
Total	290,138	6,640	139	296,917	256,232	7,212	102	263,546
Allowance for credit losses	67	24	17	108	26	39	–	65
Carrying value	$ 290,071	$ 6,616	$ 122	$ 296,809	$ 256,206	$ 7,173	$ 102	$ 263,481

(1) Stage 3 includes purchased or originated credit-impaired loans.
(2) Portfolios where the customer account level 'Probability of Default' has not been determined have been included in the 'Loans not graded' category.

Total non-retail loans

Category of PD grades ($ millions)	As at October 31, 2022 Stage 1	Stage 2	Stage 3(1)	Total	As at October 31, 2021 Stage 1	Stage 2	Stage 3(1)	Total
Investment grade	$ 385,430	$ 3,277	$ –	$ 388,707	$ 296,842	$ 2,158	$ –	$ 299,000
Non-investment grade	168,078	14,097	–	182,175	157,954	11,356	–	169,310
Watch list	26	3,494	–	3,520	43	5,426	–	5,469
Loans not graded(2)	6,919	12	–	6,931	6,306	11	–	6,317
Default	–	–	2,691	2,691	–	–	2,394	2,394
Total	560,453	20,880	2,691	584,024	461,145	18,951	2,394	482,490
Allowance for credit losses	322	320	695	1,337	212	470	655	1,337
Carrying value	$ 560,131	$ 20,560	$ 1,996	$ 582,687	$ 460,933	$ 18,481	$ 1,739	$ 481,153

(1) Stage 3 includes purchased or originated credit-impaired loans.
(2) Portfolios where the customer account level 'Probability of Default' has not been determined have been included in the 'Loans not graded' category.

(g) 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. In cases

where borrowers have opted to participate in payment deferral programs, deferral of payments is not considered past due and such loans are not aged further during the deferral period.

As at October 31 ($ millions)	2022[2] 31 – 60 days	61 – 90 days	91 days and greater[3]	Total	2021[2] 31 – 60 days	61 – 90 days	91 days and greater[3]	Total
Residential mortgages	**$ 1,015**	**$ 482**	**$ –**	**$ 1,497**	$ 732	$ 327	$ –	$ 1,059
Personal loans	**505**	**254**	**–**	**759**	411	210	–	621
Credit cards	**173**	**113**	**249**	**535**	125	83	201	409
Business and government	**122**	**47**	**–**	**169**	124	24	–	148
Total	**$ 1,815**	**$ 896**	**$ 249**	**$ 2,960**	$ 1,392	$ 644	$ 201	$ 2,237

(1) Loans past due 30 days or less are not presented in this analysis as they are not administratively considered past due.
(2) For loans where payment deferrals were granted, deferred payments are not considered past due and such loans are not aged further during the deferral period. Regular ageing of the loans resumes, after the end of the deferral period.
(3) All loans that are over 90 days past due are considered impaired with the exception of credit card receivables which are considered impaired when 180 days past due.

(h) 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)	2022	2021
Unpaid principal balance[1]	**$ 309**	$ 303
Credit related fair value adjustments	**(70)**	(68)
Carrying value	**239**	235
Stage 3 allowance	**(2)**	(1)
Carrying value net of related allowance	**$ 237**	$ 234

(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 and Housing Corporation (CMHC). MBS created under the program are primarily 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 CMHC also previously purchased insured mortgage pools from the Bank under the Insured Mortgage Purchase Program (IMPP).

The sale of mortgages under the above programs does not meet the derecognition requirements, where the Bank retains thepre-payment and interest rate risk associated with the mortgages, which represent substantially all the risks 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)	2022[1]	2021[1]
Assets		
Carrying value of residential mortgage loans	**$ 15,032**	$ 17,145
Other related assets[2]	**9,854**	9,787
Liabilities		
Carrying value of associated liabilities	**24,173**	25,833

(1) The fair value of the transferred assets is $23,379 (2021 – $25,761) and the fair value of the associated liabilities is $23,254 (2021 – $26,021), for a net position of $125 (2021 – $(260)).
(2) These include cash held in trust and trust permitted investment assets, including repurchase style transactions of mortgage-backed securities, 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 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 card 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)	2022[1]	2021[1]
Carrying value of assets associated with:		
Repurchase agreements[2]	**$ 122,552**	$ 100,083
Securities lending agreements	**52,178**	59,506
Total	**174,730**	159,589
Carrying value of associated liabilities[3]	**$ 139,025**	$ 123,469

(1) The fair value of transferred assets is $174,730 (2021 – $159,589) and the fair value of the associated liabilities is $139,025 (2021 – $123,469), for a net position of $35,705 (2021 – $36,120).
(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.

Continuing involvement in transferred financial assets that qualify for derecognition
The Bank issued loans under the Canada Emergency Business Account (CEBA) program. These loans are derecognized from the Consolidated Statement of Financial Position as the program meets the pass-through criteria for derecognition of financial assets under IFRS 9.

As at October 31, 2022, the Bank has derecognized $3.9 billion of CEBA loans (October 31, 2021 – $4.3 billion). The Bank retains a continuing involvement in these derecognized loans through its servicing of these loans on behalf of Export Development Canada. The appropriate level of administration fees for servicing the loans has been recognized.

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 LAPA 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 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 of $10 billion (2021 – $5 billion) 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 and capital vehicles
The Bank uses funding and capital vehicles to facilitate cost-efficient financing of its own operations, including the issuance of covered bonds and notes. Activities of funding structured entities are generally limited to holding an interest in a pool of assets or receivables generated by the Bank. Capital vehicles include Scotiabank LRCN Trust which was established in connection with the Bank's issuance of qualifying regulatory capital instruments. These structured entities are consolidated due to the Bank's decision-making power and ability to use that power to affect the Bank's returns.

Covered bonds
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, 2022, $45.9 billion (2021 – $31.3 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, Swiss francs and Euros. As at October 31, 2022, assets pledged in relation to these covered bonds were uninsured residential mortgages denominated in Canadian dollars of $51.4 billion (2021 – $34.7 billion). These figures exclude activities in connection with Canadian dollar-denominated covered bonds held by the Bank and that are eliminated upon consolidation or that are transferred to the Bank of Canada as part of its term repo program.

Credit card receivables securitization trust
The Bank securitizes a portion of its Canadian credit card receivables through a Bank-sponsored structured entity. This entity issues senior and subordinated notes to third-party investors and the proceeds of such issuance are used to purchase co-ownership interests in credit card receivables originated by the Bank. Recourse of the note holders is limited to the purchased interest.

The Bank is responsible for servicing the transferred credit card receivables as well as performing administrative functions for this entity. As at October 31, 2022, US$0.8 billion ($1.1 billion Canadian dollar equivalent) (2021 – US$1.3 billion, $1.5 billion Canadian dollar equivalent) Class A

notes; and US$70 million ($95 million Canadian dollar equivalent) (2021 – US$109 million, $135 million Canadian dollar equivalent) subordinated Class B and Class C notes were outstanding and included in Deposits – Business and government on the Consolidated Statement of Financial Position. As at October 31, 2022 assets pledged in relation to these notes were credit card receivables, denominated in Canadian dollars, of $1.2 billion (2021 – $1.8 billion).

Auto loan receivables securitization trusts
The Bank securitizes a portion of its Canadian auto loan receivables through Bank-sponsored structured entities. The entities issue senior and subordinated notes to the Bank and/or third-party investors, and the proceeds of such issuances are used to purchase discrete pools of retail indirect auto loan receivables from the Bank. Recourse of the note holders is limited to the auto loan receivables.

The Bank is responsible for servicing the transferred auto loan receivables as well as performing administrative functions for the entities. As at October 31, 2022, the aggregate senior and subordinated notes issued to third parties outstanding and included in Deposits – Business and government on the Consolidated Statement of Financial Position were US$15.7 million ($21.4 million Canadian dollar equivalent) (2021 – US$200.0 million, $252.6 million Canadian dollar equivalent). As at October 31, 2022, assets pledged in relation to these notes were Canadian auto loan receivables denominated in Canadian dollars of $216.4 million (2021 – $831.1 million).

Scotiabank LRCN Trust
The Bank sponsors the Scotiabank LRCN Trust established in connection with the issuance of limited recourse capital notes. As at October 31, 2022, $4,526 million (2021 – $2,003 million) capital notes were outstanding and included in Preferred shares and other equity instruments on the Consolidated Statement of Financial Position. Refer to Note 24(b) – Preferred shares and other equity instruments for further information.

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 which the Bank does not control and therefore does not consolidate.

	As at October 31, 2022			
($ millions)	Canadian multi-seller conduits that the Bank administers	Structured finance entities	Capital funding vehicles	Total
Total assets on structured entity's financial statements	**$ 3,773**	**$ 2,304**	**$ 833**	**$ 6,910**
Assets recognized on the Bank's financial statements				
Trading assets	**35**	**2**	**–**	**37**
Investment securities	**–**	**885**	**10**	**895**
Loans[1]	**–**	**704**	**59**	**763**
	35	**1,591**	**69**	**1,695**
Liabilities recognized on the Bank's financial statements				
Deposits – Business and government	**–**	**–**	**833**	**833**
	–	**–**	**833**	**833**
Bank's maximum exposure to loss	**$ 3,808**	**$ 1,591**	**$ 69**	**$ 5,468**

	As at October 31, 2021			
($ millions)	Canadian multi-seller conduits that the Bank administers	Structured finance entities	Capital funding vehicles	Total
Total assets (on structured entity's financial statements)	$ 3,519	$ 2,403	$ 833	$ 6,755
Assets recognized on the Bank's financial statements				
Trading assets	7	2	–	9
Investment securities	–	1,124	10	1,134
Loans[1]	–	639	59	698
	7	1,765	69	1,841
Liabilities recognized on the Bank's financial statements				
Deposits – Business and government	–	–	833	833
	–	–	833	833
Bank's maximum exposure to loss	$ 3,526	$ 1,765	$ 69	$ 5,360

(1) Loan balances are presented net of allowance for credit losses.

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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, 2022, the Bank has recorded $1.7 billion (2021 – $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 $2.6 billion (2021 – $1.4 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 unconsolidated 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.

As at October 31, 2022, the bank earned $2,486 million (2021 – $2,604 million) in revenue from unconsolidated Bank-sponsored mutual fund entities.

16 Property and Equipment

($ millions)	Land & Building	Equipment	Technology Assets	Leasehold Improvements	Right-of-use Assets	Total
Cost						
Balance as at October 31, 2020	$ 1,619	$ 1,936	$ 2,386	$ 1,660	$ 3,786	$ 11,387
Acquisitions	–	–	–	–	–	–
Additions	126	111	92	74	456	859
Disposals	(49)	(47)	(32)	(51)	(132)	(311)
Foreign currency adjustments and other	(127)	(94)	(36)	(34)	(107)	(398)
Balance as at October 31, 2021	**$ 1,569**	**$ 1,906**	**$ 2,410**	**$ 1,649**	**$ 4,003**	**$ 11,537**
Acquisitions	**–**	**–**	**–**	**–**	**–**	**–**
Additions	**102**	**110**	**169**	**160**	**215**	**756**
Disposals	**(56)**	**(59)**	**(20)**	**(47)**	**(98)**	**(280)**
Foreign currency adjustments and other	**62**	**405**	**(354)**	**33**	**77**	**223**
Balance as at October 31, 2022	**$ 1,677**	**$ 2,362**	**$ 2,205**	**$ 1,795**	**$ 4,197**	**$ 12,236**
Accumulated depreciation						
Balance as at October 31, 2020	$ 620	$ 1,471	$ 1,970	$ 1,024	$ 405	$ 5,490
Depreciation	42	98	155	95	379	769
Disposals	(30)	(32)	(31)	(37)	(35)	(165)
Foreign currency adjustments and other	(35)	(73)	(34)	(23)	(13)	(178)
Balance as at October 31, 2021	**$ 597**	**$ 1,464**	**$ 2,060**	**$ 1,059**	**$ 736**	**$ 5,916**
Depreciation	**37**	**83**	**153**	**98**	**378**	**749**
Disposals	**(24)**	**(59)**	**(16)**	**(51)**	**(59)**	**(209)**
Foreign currency adjustments and other	**27**	**289**	**(264)**	**11**	**17**	**80**
Balance as at October 31, 2022	**$ 637**	**$ 1,777**	**$ 1,933**	**$ 1,117**	**$ 1,072**	**$ 6,536**
Net book value						
Balance as at October 31, 2021	$ 972	$ 442	$ 350	$ 590	$ 3,267	$ 5,621[1]
Balance as at October 31, 2022	**$ 1,040**	**$ 585**	**$ 272**	**$ 678**	**$ 3,125**	**$ 5,700[1]**

(1) Includes $36 (2021 – $40) of investment property.

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17 Investments in Associates

The Bank had significant investments in the following associates:

As at October 31 ($ millions)	Country of incorporation	Nature of business	2022 Ownership percentage	2022 Date of financial statements[1]	2022 Carrying value	2021 Carrying value
Canadian Tire's Financial Services business (CTFS)[2]	**Canada**	**Financial Services**	**20.00%**	**September 30, 2022**	**$ 579**	$ 549
Bank of Xi'an Co. Ltd.[3]	**China**	**Banking**	**18.11%**	**September 30, 2022**	**1,007**	968
Maduro & Curiel's Bank N.V.[4]	**Curacao**	**Banking**	**48.10%**	**September 30, 2022**	**438**	366

(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 until the end of the 10th anniversary (October 1, 2024) at the then fair value, that can be settled, at the Bank's discretion, by issuance of common shares or cash. After October 1, 2024 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.
(3) Based on the quoted price on the Shanghai Stock Exchange, the Bank's investment in Bank of Xi'an Co. Ltd was $589 as at October 31, 2022 (October 31, 2021 – $671). The market value of the investment has remained below the carrying amount. The Bank performed an impairment test as at October 31, 2022 using a value in use ("VIU"), discounted cash flow model. The Bank concluded that there is no impairment as at October 31, 2022.
(4) 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, 2022 these reserves amounted to $67 (2021 - $60).

Summarized financial information of the Bank's significant associates are as follows.

($ millions)	For the twelve months ended[1] Revenue	Net income	As at October 31, 2022 Total assets	Total liabilities
Canadian Tire's Financial Services business (CTFS)	**$ 1,260**	**$ 399**	**$ 6,870**	**$ 5,629**
Bank of Xi'an Co. Ltd.	**1,306**	**497**	**67,864**	**62,489**
Maduro & Curiel's Bank N.V.	**324**	**99**	**7,181**	**6,288**

($ millions)	For the twelve months ended[1] Revenue	Net income	As at October 31, 2021 Total assets	Total liabilities
Canadian Tire's Financial Services business (CTFS)	$ 1,098	$ 437	$ 7,832	$ 6,722
Bank of Xi'an Co. Ltd.	1,402	541	65,006	59,828
Maduro & Curiel's Bank N.V.	304	67	6,183	5,438

(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 Wealth Management	Global Banking and Markets	Latin America	Caribbean and Central America	Total
Balance as at October 31, 2020	$ 1,690	$ 3,614	$ 240	$ 2,832	$ 903	$ 9,279
Acquisitions	–	–	–	–	–	–
Dispositions	–	–	–	–	–	–
Foreign currency adjustments and other	–	(34)	(9)	(315)	(73)	(431)
Balance as at October 31, 2021	1,690	3,580	231	2,517	830	8,848
Acquisitions	**–**	**–**	**–**	**–**	**–**	**–**
Dispositions	**–**	**–**	**–**	**–**	**–**	**–**
Foreign currency adjustments and other	**–**	**19**	**12**	**(116)**	**111**	**26**
Balance as at October 31, 2022	**$ 1,690**	**$ 3,599**	**$ 243**	**$ 2,401**	**$ 941**	**$ 8,874**

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, 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 for the CGU is then compared to its respective carrying amount to identify any impairment. P/E multiples ranging from 9.0 to 12.0 times (2021 – 10.0 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, 2022 and July 31, 2021 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, 2022.

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, 2020	$ 4,991	$ 1,973	$ 4,415	$ 166	$ 11,545
Acquisitions	2	–	–	–	2
Additions	861	–	–	–	861
Disposals	(7)	–	–	–	(7)
Foreign currency adjustments and other	(149)	(106)	–	–	(255)
Balance as at October 31, 2021	$ 5,698	$ 1,867	$ 4,415	$ 166	$ 12,146
Acquisitions	**–**	**–**	**–**	**–**	**–**
Additions	**987**	**–**	**–**	**–**	**987**
Disposals	**(2)**	**–**	**–**	**–**	**(2)**
Foreign currency adjustments and other	**4**	**8**	**–**	**–**	**12**
Balance as at October 31, 2022	**$ 6,687**	**$ 1,875**	**$ 4,415**	**$ 166**	**$ 13,143**
Accumulated amortization					
Balance as at October 31, 2020	$ 2,581	$ 1,228	$ –	$ –	$ 3,809
Amortization	639	103	–	–	742
Disposals	(5)	–	–	–	(5)
Foreign currency adjustments and other	(98)	(58)	–	–	(156)
Balance as at October 31, 2021	$ 3,117	$ 1,273	$ –	$ –	$ 4,390
Amortization	**685**	**97**	**–**	**–**	**782**
Disposals	**(1)**	**–**	**–**	**–**	**(1)**
Foreign currency adjustments and other	**8**	**5**	**–**	**–**	**13**
Balance as at October 31, 2022	**$ 3,809**	**$ 1,375**	**$ –**	**$ –**	**$ 5,184**
Net book value					
As at October 31, 2021	$ 2,581[2]	$ 594	$ 4,415	$ 166	$ 7,756
As at October 31, 2022	**$ 2,878[2]**	**$ 500**	**$ 4,415**	**$ 166**	**$ 7,959**

(1) Fund management contracts are attributable to HollisWealth Inc. (formerly DundeeWealth Inc.), MD Financial Management Inc., and Jarislowsky Fraser Limited.
(2) Computer software comprises of purchased software of $337 (2021 – $380), internally generated software of $1,555 (2021 – $1,405), and in process software not subject to amortization of $986 (2021 – $797).

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% (2021 – 3 to 5%) applied thereafter. These cash flows have been discounted at 10% (2021 – 10 to 12%).

Indefinite life intangible assets were assessed for annual impairment as at July 31, 2022 and July 31, 2021 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, 2022.

19 Other Assets

As at October 31 ($ millions)	2022	2021
Accrued interest	**$ 3,710**	$ 2,155
Accounts receivable and prepaids	**1,715**	2,201
Current tax assets	**3,349**	1,722
Margin deposit derivatives	**15,656**	5,990
Segregated fund assets	**1,795**	2,197
Pension assets (Note 28)	**1,052**	456
Receivable from brokers, dealers and clients	**4,608**	2,997
Other	**5,371**	4,226
Total	**$ 37,256**	$ 21,944

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20 Deposits

As at October 31 ($ millions)	2022 Payable on demand[1] Interest-bearing	2022 Payable on demand[1] Non-interest-bearing	2022 Payable after notice[2]	2022 Payable on a fixed date[3]	2022 Total	2021
Personal	$ 6,997	$ 9,973	$ 155,503	$ 93,419	$ 265,892	$ 243,551
Business and government	164,843	35,466	41,459	355,849	597,617	511,348
Financial institutions	13,395	1,367	1,952	35,958	52,672	42,360
Total	$ 185,235	$ 46,806	$ 198,914[4]	$ 485,226	$ 916,181	$ 797,259
Recorded in:						
Canada	$ 131,358	$ 27,810	$ 165,234	$ 318,575	$ 642,977	$ 571,254
United States	42,304	121	844	61,715	104,984	87,626
United Kingdom	–	–	415	23,828	24,243	17,232
Mexico	–	6,581	9,203	16,057	31,841	24,259
Peru	5,717	243	5,648	4,831	16,439	14,520
Chile	1,518	4,770	155	15,662	22,105	20,631
Colombia	41	506	4,209	3,455	8,211	9,184
Other International	4,297	6,775	13,206	41,103	65,381	52,553
Total[5]	$ 185,235	$ 46,806	$ 198,914	$ 485,226	$ 916,181	$ 797,259

(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 $156 (2021 – $193) of non-interest bearing deposits.
(5) Deposits denominated in U.S. dollars amount to $326,041 (2021 – $259,027), deposits denominated in Chilean pesos amount to $18,740 (2021 – $17,841), deposits denominated in Mexican pesos amount to $29,269 (2021 – $22,032) and deposits denominated in other foreign currencies amount to $106,817 (2021 – $82,871).

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, 2022	**$ 53,656**	**$ 36,035**	**$ 62,891**	**$ 110,015**	**$ 21,440**	**$ 284,037**
As at October 31, 2021	$ 34,829	$ 24,372	$ 30,918	$ 90,433	$ 20,688	$ 201,240

(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)			2022	2021
Maturity date	Interest rate (%)	Terms[1]	Carrying value[2]	Carrying value[2]
June 2025	8.90	Redeemable at any time.	**$ 253**	$ 255
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, until maturity in December 2025.	**1,690**	1,547
March 2027[3]	2.58	On March 30, 2022, the Bank redeemed these notes at 100% of their principal amount plus accrued interest to the redemption date.	**–**	1,156
January 2029[3]	3.89	Redeemable on or after January 18, 2024. After January 18, 2024, interest will be payable at an annual rate equal to the three-month bankers' acceptance rate plus 1.58%.	**1,770**	1,771
July 2029[3]	2.836	Redeemable on or after July 3, 2024. After July 3, 2024, interest will be payable at an annual rate equal to the three-month bankers' acceptance rate plus 1.18%.	**1,459**	1,510
August 2085[4]	Floating	US$57 million bearing interest at a floating rate of the offered rate for six-month US$ LIBOR plus 0.125%. Redeemable on any interest payment date.	**78**	95
May 2037[3]	4.588	US$1,250 million. Redeemable between April 12, 2027, and May 4, 2032. On May 4, 2032, interest will reset at the then prevailing 5-year US treasury rate plus 2.050%.	**1,644**	–
May 2032[3]	3.934	Redeemable on or after May 3, 2027. After May 3, 2027, interest will be payable quarterly at the then prevailing three-month bankers' acceptance rate plus 1.52%.	**1,575**	–
			$ 8,469	$ 6,334

(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 the impact of fair value hedges used for managing interest rate risk and subordinated debentures held for market-making purposes.
(3) These debentures contain non-viability contingent capital (NVCC) provisions. Under such NVCC provisions, outstanding 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) During the year, the Bank purchased for cancellation approximately US$19 million subordinated debentures due 2085.

22 Other Liabilities

As at October 31 ($ millions)	2022	2021
Accrued interest	**$ 3,612**	$ 1,454
Lease liabilities[1]	**3,323**	3,413
Accounts payable and accrued expenses	**6,995**	6,508
Current tax liabilities	**464**	1,344
Deferred tax liabilities (Note 27)	**1,100**	1,149
Gold and silver certificates and bullion	**372**	417
Margin and collateral accounts	**9,029**	7,313
Segregated fund liabilities	**1,795**	2,197
Payables to brokers, dealers and clients	**1,957**	958
Provisions (Note 23)	**287**	296
Allowance for credit losses on off-balance sheet exposures (Note 13)	**108**	65
Pension liabilities (Note 28)	**549**	661
Other liabilities of subsidiaries and structured entities	**25,010**	25,221
Other	**8,098**	7,803
Total	**$ 62,699**	$ 58,799

(1) Represents discounted value of lease liabilities.

The table below sets out a maturity analysis of undiscounted lease liabilities showing the lease payments to be made after the reporting date:

As at October 31 ($ millions)	2022	2021
Within 1 year	**$ 425**	$ 420
1 to 2 years	**414**	404
2 to 3 years	**404**	391
3 to 4 years	**387**	380
4 to 5 years	**373**	359
After 5 years	**1,962**	2,105
Total	**$ 3,965**	$ 4,059

23 Provisions

($ millions)	
As at November 1, 2020	$ 125
Provisions made during the year	306
Provisions utilized / released during the year	(135)
Balance as at October 31, 2021	$ 296
Provisions made during the year	**149**
Provisions utilized / released during the year	**(158)**
Balance as at October 31, 2022	**$ 287**

Restructuring

The Bank recorded a restructuring charge of $85 million, primarily related to the strategic decision to realign the Bank's Global Banking and Markets businesses in Asia Pacific to focus on select banking and capital markets activities in the region. The charge also included the cost of reducing Canadian and international full-time technology employees, driven by our ongoing technology modernization and digital transformation. These changes are a result of the Bank's commitment to simplify processes and optimize distribution channels to run businesses more effectively while meeting changing customer needs and our evolving geographical focus. This charge was recorded in the Other operating segment.

Prior Year

In the prior year, the Bank recorded a restructuring charge of $126 million, substantially related to International Banking for the cost of reducing branches and full-time employees, driven by the accelerated customer adoption of digital channels and process automation. These efficiencies are a result of the Bank's commitment to simplify processes and optimize distribution channels to run businesses more effectively while meeting changing customer needs. This charge was recorded in the Other operating segment.

Legal

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.

The Bank, through its Peruvian subsidiary, is engaged in legal actions related to certain value-added tax assessed amounts and associated interest totaling $165 million, which arose from certain client transactions which occurred prior to the Bank's acquisition of the subsidiary. The legal action in Peru related to the original assessed amount continues. In November 2021, the Peruvian Constitutional Court dismissed the matter relating to the accrued interest for procedural reasons. With respect to this interest component, in October 2022, the Bank filed a request for arbitration against the Republic of Peru before the International Centre for the Settlement of Investment Disputes, pursuant to the provisions of the Canada-Peru Free Trade Agreement. The claim arises out of the Constitutional Court of Peru's inequitable treatment of Scotiabank Peru's rights in breach of the Canada-Peru Free Trade Agreement. The Bank is confident that it will be successful in these matters and intends to continue to defend its position. Accordingly, no amounts have been accrued in the consolidated financial statements.

Prior Years

In the prior year, the Bank recorded settlement and litigation provisions in the amount of $62 million in connection with the Bank's former metals business. These provisions were recorded in the Other operating segment.

On August 19, 2020, the Bank entered into a Deferred Prosecution Agreement ("DPA") with the U.S. Department of Justice (the "DOJ"). Additionally, the Commodity Futures Trading Commission (the "CFTC") issued three separate orders against the Bank (collectively, the "Orders"). The DPA and the Orders (together, the "Resolutions") resolve the DOJ's and CFTC's investigations into the Bank's activities and trading practices in the metals markets and related conduct as well as pre-trade mid-market marks and related swap dealer compliance issues.

Under the terms of the Resolutions, the Bank made aggregate payments to the DOJ and CFTC of approximately $127.5 million (USD) and has agreed to retain an independent compliance monitor, which the Bank engaged on April 1, 2021. Under one of the orders, the CFTC will defer proceedings to suspend or revoke the Bank's provisional registration as a swap dealer subject to the Bank's implementation of a remediation plan, among other conditions, which the Bank is carrying out under the oversight of the independent compliance monitor, which commenced its engagement in April 2021, and which is expected to last three years under the terms of the Resolutions.

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:

	2022		2021	
As at October 31 ($ millions)	Number of shares	Amount	Number of shares	Amount
Outstanding at beginning of year	**1,215,337,523**	**$ 18,507**	1,211,479,297	$ 18,239
Issued in relation to share-based payments, net (Note 26)	**1,951,372**	**136**	3,016,072	200
Issued in relation to the acquisition of a subsidiary or associated corporation	**7,000,000**	**570**	842,154	68
Repurchased for cancellation under the Normal Course Issuer Bid	**(32,913,800)**	**(506)**	–	–
Outstanding at end of year	**1,191,375,095**(1)	**$ 18,707**	1,215,337,523(1)	$ 18,507

(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 2022, the number of such shares bought and sold was 17,757,599 (2021 – 18,532,448).

Dividend

The dividends paid on common shares in fiscal 2022 and 2021 were $4,858 million ($4.06 per share) and $4,371 million ($3.60 per share), respectively. The Board of Directors approved a quarterly dividend of $1.03 per common share at its meeting on November 28, 2022. This quarterly dividend applies to shareholders of record at the close of business on January 4, 2023, and is payable January 27, 2023. Refer to Note 24(c) – Restriction on payment of dividends and retirement of shares.

Normal Course Issuer Bid

On November 30, 2021, the Bank announced that OSFI and the Toronto Stock Exchange (TSX) approved its normal course issuer bid (the "2022 NCIB") pursuant to which it may repurchase for cancellation up to 24 million of the Bank's common shares.

On March 28, 2022, the Bank announced that OSFI and the Toronto Stock Exchange (TSX) approved an amendment to the 2022 NCIB (the "2022 NCIB Amendment") to increase the number of common shares that the Bank may repurchase for cancellation from 24 million to 36 million. Purchases under the 2022 NCIB commenced on December 2, 2021, and will terminate upon earlier of: (i) the Bank purchasing the maximum number of common shares under the 2022 NCIB Amendment, (ii) the Bank providing a notice of termination, or (iii) December 1, 2022.

During the year ended October 31, 2022, the Bank repurchased and cancelled approximately32.9 million common shares at a volume weighted average price of $87.28 per share for a total amount of $2,873 million.

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Non-viability Contingent Capital

The maximum number of common shares issuable on conversion of NVCC subordinated debentures, NVCC subordinated additional tier 1 capital notes, including those issued to Scotiabank LRCN Trust as recourse assets in respect of NVCC limited recourse capital notes, and NVCC preferred shares as at October 31, 2022 would be 4,580 million common shares (2021 – 3,246 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:

	2022				2021			
As at October 31 ($ millions)	Number of shares	Amount	Dividends declared per share[1]	Conversion feature	Number of shares	Amount	Dividends declared per share	Conversion feature
NVCC Preferred shares:[a]								
Series 32[b]	–	–	–	–	–	–	0.138829	Series 33
Series 33[b]	–	–	–	–	–	–	0.100614	Series 32
Series 34[c]	–	–	–	–	–	–	0.687500	Series 35
Series 36[d]	–	–	–	–	–	–	1.031250	Series 37
Series 38[e]	–	–	**0.303125**	**Series 39**	20,000,000	500	1.212500	Series 39
Series 40[f]	**12,000,000**	**300**	**1.212500**	**Series 41**	12,000,000	300	1.212500	Series 41
Total preferred shares	**12,000,000**	**$ 300**			32,000,000	$ 800		

(1) Dividends declared from November 1, 2021 to October 31, 2022.

Terms of NVCC preferred shares

	First issue date	Issue price	Initial dividend	Initial dividend payment date	Rate reset spread	Redemption date	Redemption price
NVCC Preferred shares[a]:							
Series 38[e]	September 16, 2016	25.00	0.441800	January 27, 2017	4.19%	January 27, 2022	25.00
Series 40[f]	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 the Non-cumulative 5-Year Rate Reset Preferred Shares Non Viability Contingent Capital (NVCC) (Series 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 41 are payable quarterly, as and when declared by the Board. Dividends on the Non-cumulative 5-Year Rate Reset Preferred Shares NVCC (Series 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 February 2, 2021, the Bank redeemed all outstanding Non-cumulative Preferred Shares Series 32 and Series 33 at a price equal to $25.00 per share plus dividends declared on January 26, 2021 of $0.009891 per Series 32 share and $0.006976 per Series 33 share.

(c) On April 26, 2021, the Bank redeemed all outstanding Non-cumulative Preferred Shares Series 34 at a price equal to $25.00 per share plus dividends declared on February 23, 2021 of $0.343750 per Series 34 share.

(d) On July 26, 2021, the Bank redeemed all outstanding Non-cumulative Preferred Shares Series 36 at a price equal to $25.00 per share plus dividends declared on June 1, 2021 of $0.343750 per Series 36 share.

(e) On January 27, 2022 the Bank redeemed all outstanding Non-cumulative Preferred Shares Series 38 at a price equal to $25.00 per share plus dividends declared on November 30, 2021 of $0.3031250 per Series 38 share.

(f) Holders of Non-cumulative 5-Year Rate Reset Preferred Shares Series 40 (NVCC) will have the option to convert shares into an equal number of Non-cumulative Floating Rate Preferred Shares Series 41 (NVCC) on January 27, 2024, and on January 27 every five years thereafter. If outstanding, holders of Non-cumulative Floating Rate Reset Preferred Shares Series 41 (NVCC) will have the option to convert shares into an equal number of Non-cumulative 5-Year Rate Reset Preferred Shares Series 40 (NVCC) on January 27, 2029, and on January 27 every five years thereafter. With respect to Series 40 and 41, if the Bank determines that, after giving effect to any Election Notices received, there would be less than 1,000,000 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. With regulatory approval, Series 40 preferred shares may be redeemed by the Bank on January 27, 2024 and every five years thereafter, and for Series 41 preferred shares, if outstanding, 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 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 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).

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Other equity instruments

Other equity instruments are comprised of NVCC additional Tier 1 qualifying regulatory capital notes:

First issue date/Series number	Notional Amount (millions)	Next reset date	Interest rate	Interest rate after reset	Next redemption date	Redemption frequency after reset[1]	2022 Amount	2022 Distributions paid per Note[2]	2021 Amount	2021 Distributions paid per Note[2]
Subordinated Additional Tier 1 Capital Notes[3][4]										
October 12, 2017	US$ 1,250	January 12, 2023	6.56714%	LIBOR[5] +2.648%	January 12, 2023	Quarterly	**$ 1,560**	**US$ 46.50**	$ 1,560	US$ 46.50
June 4, 2020	US$ 1,250	June 4, 2025	4.900%	UST[6] +4.551%	June 4, 2025	Every five years	**$ 1,689**	**US$ 49.00**	$ 1,689	US$ 49.00
Limited Recourse Capital Notes[3][7]										
Series 1[8]	$ 1,250	July 27, 2026	3.700%	GOC[9] +2.761%	June 27, 2026	Every five years	**$ 1,250**	**$ 37.00**	$ 1,250	$ 13.51
Series 2[10]	US$ 600	October 27, 2026	3.625%	UST[6] +2.613%	October 27, 2026	Quarterly	**$ 753**	**US$ 38.26**	$ 753	US$ –
Series 3[11]	$ 1,500	July 27, 2027	7.023%	GOC[9] +3.95 %	June 27, 2027	Every five years	**$ 1,500**	**$ 25.45**	$ –	$ –
Series 4[12]	US$ 750	October 27, 2027	8.625%	UST[6] +4.389%	October 27, 2027	Quarterly	**$ 1,023**	**US$ –**	$ –	US$ –
Total other equity instruments							**$ 7,775**		$ 5,252	

(1) Each security is redeemable at the sole discretion of the Bank on the first reset date and every quarter or five years, as applicable, thereafter. Limited Recourse Capital Notes (LRCN) Series 1 and Series 3 are also redeemable in the one month period preceding each reset date. The securities are also redeemable following a regulatory or tax event, as described in the offering documents. All redemptions are subject to regulatory consent and occur at a redemption price of par plus accrued and unpaid interest (unless canceled, where applicable).
(2) Distributions paid from November 1 to October 31 in the relevant fiscal year per face amount of $1,000 or US$1,000, as applicable.
(3) The securities rank pari passu to each other and are the Bank's direct unsecured obligations, ranking subordinate to Bank's other subordinated indebtedness.
(4) While interest is payable on the securities when it becomes due, the Bank may, at its sole discretion and with notice, cancel interest payments. Refer to Note 24(c) – Restriction on payment of dividends and retirement of shares.
(5) Three-month US$ LIBOR.
(6) The then-prevailing five-year U.S. Treasury Rate.
(7) Interest on LRCN is non-deferrable, however, non-payment of interest that is not cured within five business days results in a Recourse Event. A Recourse Event of the respective Series occurs if (a) there is non-payment in cash by the Bank of the principal amount, together with any accrued and unpaid interest, on the maturity date, (b) there is non-payment in cash of interest which is not cured within 5 business days, (c) there is non-payment in cash of the redemption price in connection with the redemption of the LRCNs, (d) an event of default occurs (i.e. bankruptcy, insolvency, or liquidation of the Bank), or (e) there is an NVCC Trigger Event. Upon the occurrence of a Recourse Event, the noteholder's sole recourse will be limited to their proportionate share of the Series' respective assets held in Scotiabank LRCN Trust, a consolidated entity, which consist initially of the respective AT1 Notes or, following an NVCC Trigger Event, common shares. Refer to Note 24(c) – Restriction on payment of dividends and retirement of shares.
(8) On June 15, 2021, the Bank issued $1,250 million 3.70% Fixed Rate Resetting Limited Recourse Capital Notes Series 1 (NVCC) ("LRCN Series 1"). In connection with the issuance of LRCN Series 1, the Bank issued $1,250 million of Fixed Rate Resetting Perpetual Subordinated Additional Tier 1 Capital Notes (NVCC) ("the Series 1 AT1 Notes") to Scotiabank LRCN Trust to be held as trust assets in connection with the LRCN structure.
(9) The then-prevailing five-year Government of Canada yield.
(10) On October 7, 2021, the Bank issued US$600 million 3.625% Fixed Rate Resetting Limited Recourse Capital Notes Series 2 (NVCC) ("LRCN Series 2"). In connection with the issuance of LRCN Series 2, the Bank issued US$600 million of Fixed Rate Resetting Perpetual Subordinated Additional Tier 1 Capital Notes (NVCC) ("the Series 2 AT1 Notes") to Scotiabank LRCN Trust to be held as trust assets in connection with the LRCN structure.
(11) On June 16, 2022, the Bank issued $1,500 million 7.023% Fixed Rate Resetting Limited Recourse Capital Notes Series 3 (NVCC) ("LRCN Series 3"). In connection with the issuance of LRCN Series 3, the Bank issued $1,500 million of Fixed Rate Resetting Perpetual Subordinated Additional Tier 1 Capital Notes (NVCC) ("the Series 3 AT1 Notes") to Scotiabank LRCN Trust to be held as trust assets in connection with the LRCN structure.
(12) On October 25, 2022, the Bank issued US$750 million 8.625% Fixed Rate Resetting Limited Recourse Capital Notes Series 4 (NVCC) ("LRCN Series 4"). In connection with the issuance of LRCN Series 4, the Bank issued US$750 million of Fixed Rate Resetting Perpetual Subordinated Additional Tier 1 Capital Notes (NVCC) ("the Series 4 AT1 Notes") to Scotiabank LRCN Trust to be held as trust assets in connection with the LRCN structure.

Contractual NVCC provisions contained in the Bank's Subordinated Additional Tier 1 Capital Notes, including those issued to Scotiabank LRCN Trust as recourse assets in respect of the LRCNs, trigger conversion of these securities 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 Subordinated Additional Tier 1 Capital Notes (NVCC), 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) $5.00 (subject to adjustments in certain events and converted to US dollar-equivalent, where applicable, each 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 and converted to US dollar-equivalent, where applicable). U.S. dollar equivalents of the floor price and the current market price, where applicable, are based on the CAD/USD exchange rate on the day prior to the trigger event.

The notes above 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 respective dates of issuance, the Bank has assigned an insignificant value to each 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, 2022, the Bank paid aggregate distributions on these notes of $239 million (2021 – $162 million), net of income taxes of $30 million (2021 – $4 million), based on exchange rates in effect on the payment dates, where applicable.

(c) Restrictions on payment of dividends and retirement of shares

Under the Bank Act, the Bank is prohibited from declaring any dividends on its common or preferred shares or redeeming, purchasing or otherwise retiring such shares when the Bank is, or would be placed by such a declaration or retirement, in contravention of the capital adequacy, liquidity or any other regulatory directives issued under the Bank Act.

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 until such distributions are made in full or the twelfth month following the non-payment of such distributions. Similarly, should the Bank fail to declare regular dividends on any of its directly issued and outstanding preferred or common shares, cash distributions will also not be made on any of the Scotiabank Trust Securities.

In the event that distributions are not paid in full on the Bank's Subordinated Additional Tier 1 Capital Notes (NVCC), including those issued as recourse assets in respect of LRCNs to Scotiabank LRCN Trust where the trustee has not waived such distributions or no longer holds the respective AT1 Notes, 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.

In the event that dividends to which preferred shareholders are then entitled have not been paid or sufficient funds have not been set aside to do so, the Bank has undertaken not to declare dividends on its common shares or redeem, purchase or otherwise retire its common shares.

On March 13, 2020, OSFI advised federally regulated deposit taking institutions to suspend buybacks and increases to dividends in respect of its common shares as part of COVID-19 measures. On November 4, 2021, OSFI removed the COVID-19 related restrictions and advised that such institutions may increase regular dividends and, subject to approval, repurchase common shares.

Currently, the above limitations do not restrict the payment of dividends on or retirement of 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 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, OSFI expects D-SIBs to hold a 2.5% Domestic Stability Buffer, as at October 31, 2022. This results in current targets for CET1, Tier 1 and Total Capital ratios of 10.5%, 12.0% and 14.0%, respectively. 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)	2022	2021
Capital[1]		
Common Equity Tier 1 capital	**$ 53,081**	$ 51,010
Net Tier 1 capital	**61,262**	57,915
Total regulatory capital	**70,710**	66,101
Total loss absorbing capacity (TLAC)[2]	**126,565**	115,681
Risk-weighted assets/exposures used in calculation of capital ratios		
Risk-weighted assets[1]	**$ 462,448**	$ 416,105
Leverage exposures[3]	**1,445,619**	1,201,766
Regulatory ratios[1]		
Common Equity Tier 1 capital ratio	**11.5%**	12.3%
Tier 1 capital ratio	**13.2%**	13.9%
Total capital ratio	**15.3%**	15.9%
Total loss absorbing capacity ratio[2]	**27.4%**	27.8%
Leverage ratio[3]	**4.2%**	4.8%
Total loss absorbing capacity leverage ratio[2]	**8.8%**	9.6%

(1) This measure has been disclosed in this document in accordance with OSFI Guideline – Capital Adequacy Requirements (November 2018).
(2) This measure has been disclosed in this document in accordance with OSFI Guideline – Total Loss Absorbing Capacity (September 2018). Results for October 31, 2021 are shown for comparative purposes and were not a regulatory requirement.
(3) This measure has been disclosed in this document in accordance with OSFI Guideline – Leverage Requirements (November 2018).

The Bank exceeded the OSFI target capital ratios as at October 31, 2022.

26 Share-Based Payments

(a) Stock option plans

The Bank grants stock options as part of the employee Stock Option Plan as well as stand-alone stock appreciation rights (SARs). Options to purchase common shares and/or to receive an equivalent cash payment, as applicable, may be granted to select employees at an exercise price of the higher of the closing price of the Bank's common shares on the 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.

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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. An additional 12 million common shares have been reserved for issuance under the Bank's employee Stock Option Plan as approved by the shareholders at the Annual General Meeting held in April 2022. There is a total of 141 million common shares which have been reserved for issuance under the Bank's employee Stock Option Plan of which 117 million common shares have been issued as a result of the exercise of options and 10 million common shares are committed under outstanding options, leaving 14 million common shares available for issuance as options. Outstanding options expire on dates ranging from December 10, 2022 to December 9, 2031.

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 Plan includes:

- Stock options

  Employee stock options granted are equity-classified stock options which call for settlement in shares.

  The amount recorded in equity – other reserves for vested stock options as at October 31, 2022 was $104 million (2021 – $111 million).

  In 2022, an expense of $10 million (2021 – $7 million) was recorded in salaries and employee benefits in the Consolidated Statement of Income. As at October 31, 2022, future unrecognized compensation cost for non-vested stock options was $7 million (2021 – $6 million) which is to be recognized over a weighted-average period of 2.07 years (2021 – 2.02 years).

- Stock appreciation rights

  Stand-alone SARs are granted instead of stock options to select 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 2022, 85,136 SARs were granted (2021 – 90,392) and as at October 31, 2022, 558,053 SARs were outstanding (2021 – 578,643), of which 552,272 SARs were vested (2021 – 571,575).

  The share-based payment liability recognized for vested SARs as at October 31, 2022 was $2 million (2021 – $7 million). The corresponding intrinsic value of this liability as at October 31, 2022 was $5 million (2021 – $7 million).

  In 2022, a benefit of $3 million (2021 – benefit of $1 million) was recorded in salaries and employee benefits in the Consolidated Statement of Income. This benefit is net of $0.1 million losses arising from derivatives used to manage the volatility of share-based payments (2021 – $12 million gains).

Determination of fair values

The share-based payment liability and corresponding expense for SARs were quantified using the Black-Scholes option pricing model with the following assumptions and resulting fair value per award:

As at October 31	2022	2021
Assumptions		
Risk-free interest rate%	**3.31% - 5.00%**	0.59% - 1.53%
Expected dividend yield	**5.98%**	4.34%
Expected price volatility	**17.64% - 27.09%**	15.12% - 23.51%
Expected life of option	**0.05 - 6.11 years**	0.00 - 6.12 years
Fair value		
Weighted-average fair value	**$ 4.79**	$ 14.46

The share-based payment expense for stock options, was quantified using the Black-Scholes option pricing model on the date of grant. The fiscal 2022 and 2021 stock option grants were fair valued using the following weighted-average assumptions and resulting fair value per award:

	2022 Grant	2021 Grant
Assumptions		
Risk-free interest rate %	**1.42%**	0.58%
Expected dividend yield	**4.11%**	5.10%
Expected price volatility	**17.67%**	19.41%
Expected life of option	**6.7 Years**	6.8 Years
Fair value		
Weighted-average fair value	**$ 7.54**	$ 4.60

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	2022 Number of stock options (000's)	2022 Weighted average exercise price	2021 Number of stock options (000's)	2021 Weighted average exercise price
Outstanding at beginning of year	**10,458**	**$ 69.08**	11,792	$ 66.44
Granted	**1,716**	**85.46**	1,876	74.34
Exercised as options	**(1,951)**	**62.04**	(3,016)	53.50
Exercised as SARs	**(133)**	**67.37**	(59)	61.30
Forfeited	**(183)**	**74.30**	(127)	70.23
Expired	**–**	**–**	(8)	61.55
Outstanding at end of year[2]	**9,907**	**$ 73.24**	10,458	$ 69.08
Exercisable at end of year[2]	**4,304**	**$ 70.24**	5,252	$ 65.85
Available for grant	**14,546**		3,945	

	Options Outstanding			Options Exercisable	
As at October 31, 2022	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					
$55.63 to $68.32	**2,030**	**1.76**	**$ 63.24**	**2,030**	**$ 63.24**
$68.36 to $74.34	**5,353**	**6.57**	**$ 71.84**	**1,437**	**$ 73.39**
$74.35 to $85.46	**2,524**	**7.62**	**$ 84.25**	**837**	**$ 81.81**
	9,907	**5.85**	**$ 73.24**	**4,304**	**$ 70.24**

(1) Excludes SARs.
(2) Includes 1,287,242 options originally issued under HollisWealth plans (2021 -nil).

(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 matches50-60% of eligible contributions, depending on the region, up to a maximum dollar amount, which is expensed in salaries and employee benefits. During 2022, the Bank's contributions totalled $80 million (2021 – $74 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, 2022, an aggregate of19 million common shares were held under the employee share ownership plans (2021 – 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. Most grants of 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 the Performance Share 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 2022, an aggregate expense of $328 million (2021 – $218 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 payments of $120 million (2021 – $306 million gains).

As at October 31, 2022, the share-based payment liability recognized for vested awards under these plans was $763 million (2021 – $887 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, 2022, there were 1,890,117 units (2021 – 1,496,911) awarded and outstanding of which 2,760,706 units were vested (2021 – 1,095,062).

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, 2022, there were 289,646 units outstanding (2021 – 245,138).

Restricted Share Unit Plan (RSU)

Under the RSU Plan, select 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, 2022, there were 5,200,515 units (2021 – 4,342,698) awarded and outstanding of which 3,390,197 were vested (2021 – 2,929,298).

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Performance Share Unit Plan (PSU)
Eligible executives receive an award of performance share units which, for the majority of grants, vest at the end of three years. Certain grants provide for a graduated vesting schedule which includes a specific performance factor calculation. 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 units 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, 2022, there were 7,525,441 units (2021 – 8,693,704) outstanding subject to performance criteria, of which 11,759,971 units were vested (2021 – 6,467,053).

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)	2022	2021
Provision for income taxes in the Consolidated Statement of Income:		
Current income taxes:		
Domestic:		
Federal	**$ 1,779**	$ 1,105
Provincial	**1,190**	824
Adjustments related to prior periods	**(251)**	(27)
Foreign	**897**	726
Adjustments related to prior periods	**(86)**	(24)
	3,529	2,604
Deferred income taxes:		
Domestic:		
Federal	**(543)**	32
Provincial	**(341)**	8
Foreign	**113**	227
	(771)	267
Total provision for income taxes in the Consolidated Statement of Income	**$ 2,758**	$ 2,871
Provision for income taxes in the Consolidated Statement of Changes in Equity:		
Current income taxes	**$ (2,651)**	$ 435
Deferred income taxes	**945**	(100)
	(1,706)	335
Reported in:		
Other Comprehensive Income	**(1,671)**	341
Retained earnings	**(35)**	(6)
Other reserves	**–**	–
Total provision for income taxes in the Consolidated Statement of Changes in Equity	**(1,706)**	335
Total provision for income taxes	**$ 1,052**	$ 3,206
Provision for income taxes in the Consolidated Statement of Income includes:		
Deferred tax expense (benefit) relating to origination/reversal of temporary differences	**$ (771)**	$ 269
Deferred tax expense (benefit) of tax rate changes	**–**	(2)
	$ (771)	$ 267

(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:

	2022		2021	
For the year ended October 31 ($ millions)	Amount	Percent of pre-tax income	Amount	Percent of pre-tax income
Income taxes at Canadian statutory rate	**$ 3,394**	**26.2%**	$ 3,364	26.2%
Increase (decrease) in income taxes resulting from:				
Lower average tax rate applicable to subsidiaries and foreign branches	**(375)**	**(2.9)**	(245)	(1.9)
Tax-exempt income from securities	**(284)**	**(2.2)**	(236)	(1.8)
Deferred income tax effect of substantively enacted tax rate changes	**–**	**–**	(2)	–
Other, net	**23**	**0.2**	(10)	(0.1)
Total income taxes and effective tax rate	**$ 2,758**	**21.3%**	$ 2,871	22.4%

(c) Deferred taxes

Significant components of the Bank's deferred tax assets and liabilities are as follows:

	Statement of Income		Statement of Financial Position	
	For the year ended		As at	
October 31 ($ millions)	2022	2021	2022	2021
Deferred tax assets:				
Loss carryforwards	**$ (904)**	$ 52	**$ 1,079**	$ 174
Allowance for credit losses	**(17)**	405	**969**	922
Deferred compensation	**42**	(77)	**199**	241
Deferred income	**192**	88	**54**	254
Property and equipment	**(60)**	(106)	**359**	364
Pension and other post-retirement benefits	**10**	(28)	**234**	522
Securities	**(65)**	(21)	**433**	323
Lease liabilities	**(31)**	59	**946**	875
Cash flow hedges	**–**	–	**–**	49
Other	**(81)**	(119)	**380**	663
Total deferred tax assets	**$ (914)**	$ 253	**$ 4,653**	$ 4,387
Deferred tax liabilities:				
Cash flow hedges	**$ –**	$ –	**$ 159**	$ 34
Deferred compensation	**(7)**	(16)	**148**	131
Deferred income	**(7)**	(8)	**40**	14
Property and equipment	**135**	94	**810**	808
Pension and other post-retirement benefits	**(12)**	(9)	**106**	97
Securities	**(54)**	14	**236**	179
Investment in subsidiaries and associates	**(14)**	(40)	**126**	122
Intangible assets	**37**	53	**1,613**	1,774
Other	**(221)**	(102)	**612**	326
Total deferred tax liabilities	**$ (143)**	$ (14)	**$ 3,850**	$ 3,485
Net deferred tax assets (liabilities)[1]	**$ (771)**	$ 267	**$ 803**	$ 902

(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 $803 (2021 – $902) are represented by deferred tax assets of $1,903 (2021 – $2,051), and deferred tax liabilities of $1,100 (2021 – $1,149) on the Consolidated Statement of Financial Position.

The major changes to net deferred taxes were as follows:

For the year ended October 31 ($ millions)	2022	2021
Balance at beginning of year	**$ 902**	$ 1,112
Deferred tax benefit (expense) for the year recorded in income	**771**	(267)
Deferred tax benefit (expense) for the year recorded in equity	**(945)**	100
Disposed in divestitures	**–**	–
Other	**75**	(43)
Balance at end of year	**$ 803**	$ 902

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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 $30 million (October 31, 2021 – $24 million). The amount related to unrecognized losses is $30 million, which will expire as follows: $25 million between 2023 and 2032 and $5 million has no expiry.

Included in the net deferred tax asset are tax benefits of $1,420 million (2021 – $164 million) that relate to tax losses incurred in Canadian or foreign operations 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, 2022 is approximately $41 billion (2021 – $34 billion).

Canadian Tax Matters

The Bank received reassessments totaling $1,506 million of tax and interest as a result of the Canada Revenue Agency (CRA) denying the tax deductibility of certain Canadian dividends received during the 2011-2017 taxation years. The circumstances of the dividends subject to these reassessments are similar to those prospectively addressed by tax rules introduced in 2015 and 2018. The Bank has filed a Notice of Appeal with the Tax Court of Canada against the federal reassessment in respect of its 2011 taxation year.

A subsidiary of the Bank has received withholding tax assessments from the CRA in respect of certain of its securities lending transactions for its 2014-2017 taxation years totaling $470 million of tax, penalties, and interest.

In respect of both matters 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.

2022 Proposed Canadian Federal Tax Measures

On August 9, 2022, the Department of Finance released draft legislative proposals relating to tax measures announced in the Federal Budget on April 7, 2022. These tax measures include the Canada Recovery Dividend ("CRD") under which the Bank will pay a one-time 15% tax on "taxable income" in excess of $1 billion, as well as an increase of 1.5% to the Bank's corporate income tax rate on its future taxable income above $100 million. The draft legislation provided more detail on the basis for the CRD, including that "taxable income" will be based on the average taxable income for the 2020 and 2021 taxation years. The CRD will be payable in equal amounts over five years.

On November 4, 2022, the Fall Economic Statement Implementation Act (Bill C-32) containing these measures was introduced into the legislature for the first reading. On November 22, 2022, Bill C-32 completed its second legislative reading.

The impact of these proposed tax measures has not been recognized in the Bank's financial results as at October 31, 2022 as they are not substantively enacted, which would only occur after the third legislative reading. Once substantively enacted, an income tax expense will be recognized in the Bank's Consolidated Statement of Income for the entire CRD obligation. The CRD payable is estimated at approximately $640 million.

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, US, Mexico, 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, which includes a closed defined benefit (DB) component. Employees hired in Canada on or after May 1, 2018, participate in a defined contribution (DC) component only. 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 Capital and Compensation Committee (HCOB) of the Board approves the charter of the Pension Administration and Investment Committee (PAIC), reviews reports, and approves the investment policy. The HCOB also reviews and recommends any amendments to the SPP to the Board of Directors.
- PAIC is responsible for recommending the investment policy to the HCOB, for appointing and monitoring investment managers, and for reviewing auditor and actuary reports. PAIC also monitors the administration of member pension benefits. PAIC has independent member representation on the committee.
- 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.
- 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, 2021. 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, US, Mexico, Uruguay, 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. 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.

a) Relative size of plan obligations and assets

	Pension plans			Other benefit plans	
	Canada				
For the year ended October 31, 2022	SPP	Other	International	Canada	International
Percentage of total benefit obligations	**72%**	**15%**	**13%**	**52%**	**48%**
Percentage of total plan assets	**74%**	**11%**	**15%**	**0%**	**100%**
Percentage of total benefit expense[1]	**74%**	**25%**	**1%**	**31%**	**69%**

	Pension plans			Other benefit plans	
	Canada				
For the year ended October 31, 2021	SPP	Other	International	Canada	International
Percentage of total benefit obligations	72%	15%	13%	56%	44%
Percentage of total plan assets	75%	10%	15%	0%	100%
Percentage of total benefit expense[1]	78%	21%	1%	31%	69%

(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 2022, and the prior year.

Contributions to the principal plans for the year ended October 31 ($ millions)	2022	2021
Defined benefit pension plans (cash contributions to fund the plans, including paying beneficiaries under the unfunded pension arrangements)		
SPP (excluding DC provision)	**$ 184**	$ 320
All other plans	**80**	85
Other benefit plans (cash contributions mainly in the form of benefit payments to beneficiaries)	**59**	73
Defined contribution pension and other benefit plans (cash contributions)	**126**	103
Total contributions[1]	**$ 449**	$ 581

(1) Based on preliminary estimates, the Bank expects to make contributions of $16 to the SPP (excluding the DC provision), $76 to all other defined benefit pension plans, $67 to other benefit plans and $136 to all defined contribution plans for the year ending October 31, 2023.

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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.

As at October 31 ($ millions)	Pension plans 2022	Pension plans 2021	Other benefit plans 2022	Other benefit plans 2021
Benefit obligation				
Benefit obligation of plans that are wholly unfunded	**$ 353**	$ 438	**$ 902**	$ 1,058
Benefit obligation of plans that are wholly or partly funded	**7,277**	9,146	**221**	244
Funded status				
Benefit obligation of plans that are wholly or partly funded	**$ 7,277**	$ 9,146	**$ 221**	$ 244
Fair value of assets	**8,309**	9,464	**116**	143
Excess (deficit) of fair value of assets over benefit obligation of wholly or partly funded plans	**$ 1,032**	$ 318	**$ (105)**	$ (101)
Benefit obligation of plans that are wholly unfunded	**353**	438	**902**	1,058
Excess (deficit) of fair value of assets over total benefit obligation	**$ 679**	$ (120)	**$ (1,007)**	$ (1,159)
Effect of asset limitation and minimum funding requirement	**(176)**	(85)	**–**	–
Net asset (liability) at end of year	**$ 503**	$ (205)	**$ (1,007)**	$ (1,159)

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d) Financial information

The following tables present financial information related to the Bank's principal plans.

	Pension plans		Other benefit plans	
For the year ended October 31 ($ millions)	**2022**	2021	**2022**	2021
Change in benefit obligation				
Benefit obligation at beginning of year	**$ 9,584**	$ 10,349	**$ 1,302**	$ 1,420
Current service cost	**281**	339	**22**	24
Interest cost on benefit obligation	**335**	269	**61**	56
Employee contributions	**25**	24	**–**	–
Benefits paid	**(457)**	(450)	**(89)**	(81)
Actuarial loss (gain)	**(2,234)**	(857)	**(226)**	(63)
Past service cost	**34**	37	**(1)**	(1)
Business acquisition	**–**	2	**–**	(2)
Settlements	**–**	(34)	**(2)**	(14)
Foreign exchange	**62**	(95)	**56**	(37)
Benefit obligation at end of year	**$ 7,630**	$ 9,584	**$ 1,123**	$ 1,302
Change in fair value of assets				
Fair value of assets at beginning of year	**9,464**	8,541	**143**	158
Interest income on fair value of assets	**363**	257	**13**	13
Return on plan assets in excess of (less than) interest income on fair value of assets	**(1,402)**	854	**(24)**	–
Employer contributions	**264**	405	**59**	73
Employee contributions	**25**	24	**–**	–
Benefits paid	**(457)**	(450)	**(89)**	(81)
Administrative expenses	**(12)**	(16)	**–**	–
Business acquisition	**–**	–	**–**	–
Settlements	**–**	(34)	**(2)**	(14)
Foreign exchange	**64**	(117)	**16**	(6)
Fair value of assets at end of year	**$ 8,309**	$ 9,464	**$ 116**	$ 143
Funded status				
Excess (deficit) of fair value of assets over benefit obligation at end of year	**679**	(120)	**(1,007)**	(1,159)
Effect of asset limitation and minimum funding requirement [1]	**(176)**	(85)	**–**	–
Net asset (liability) at end of year	**$ 503**	$ (205)	**$ (1,007)**	$ (1,159)
Recorded in:				
Other assets in the Bank's Consolidated Statement of Financial Position	**1,052**	456	**1**	–
Other liabilities in the Bank's Consolidated Statement of Financial Position	**(549)**	(661)	**(1,008)**	(1,159)
Net asset (liability) at end of year	**$ 503**	$ (205)	**$ (1,007)**	$ (1,159)
Annual benefit expense				
Current service cost	**281**	339	**22**	24
Net interest expense (income)	**(20)**	23	**48**	43
Administrative expenses	**15**	14	**–**	–
Past service costs	**34**	37	**(1)**	(1)
Amount of settlement (gain) loss recognized	**–**	–	**–**	–
Remeasurement of other long-term benefits	**–**	–	**(9)**	(6)
Benefit expense (income) recorded in the Consolidated Statement of Income	**$ 310**	$ 413	**$ 60**	$ 60
Defined contribution benefit expense	**$ 125**	$ 102	**$ 1**	$ 1
Remeasurements				
(Return) on plan assets in excess of interest income on fair value of assets	**1,402**	(854)	**24**	–
Actuarial loss (gain) on benefit obligation	**(2,234)**	(857)	**(217)**	(57)
Change in the asset limitation	**70**	(47)	**–**	–
Remeasurements recorded in OCI	**$ (762)**	$ (1,758)	**$ (193)**	$ (57)
Total benefit cost	**$ (327)**	$ (1,243)	**$ (132)**	$ 4
Additional details on actual return on assets and actuarial (gains) and losses				
Actual return on assets (net of administrative expenses)	**$ (1,051)**	$ 1,095	**$ (11)**	$ 13
Actuarial (gains) and losses from changes in demographic assumptions	**–**	8	**3**	8
Actuarial (gains) and losses from changes in financial assumptions	**(2,256)**	(973)	**(219)**	(63)
Actuarial (gains) and losses from changes in experience	**22**	108	**(10)**	(8)
Additional details on fair value of pension plan assets invested				
In Scotiabank securities (stock, bonds)	**58**	60	**–**	–
In property occupied by Scotiabank	**4**	4	**–**	–
Change in asset ceiling/onerous liability				
Asset ceiling /onerous liability at end of prior year	**85**	134	**–**	–
Interest expense	**8**	11	**–**	–
Remeasurements	**70**	(47)	**–**	–
Foreign exchange	**13**	(13)	**–**	–
Asset ceiling /onerous liability at end of year	**$ 176**	$ 85	**$ –**	$ –

(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.

e) Maturity profile of the defined benefit obligation

The weighted average duration of the total benefit obligation at October 31, 2022 is 12.9 years (2021 – 15.0 years).

For the year ended October 31	Pension plans 2022	Pension plans 2021	Other benefit plans 2022	Other benefit plans 2021
Disaggregation of the benefit obligation (%)				
Canada				
Active members	**49%**	53%	**3%**	4%
Inactive and retired members	**51%**	47%	**97%**	96%
Total	**100%**	100%	**100%**	100%
Mexico				
Active members	**26%**	21%	**40%**	43%
Inactive and retired members	**74%**	79%	**60%**	57%
Total	**100%**	100%	**100%**	100%
United States				
Active members	**42%**	45%	**36%**	40%
Inactive and retired members	**58%**	55%	**64%**	60%
Total	**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:

For the year ended October 31	Pension plans 2022	Pension plans 2021	Other benefit plans 2022	Other benefit plans 2021
Benefit obligation at end of year				
Discount rate – all plans	**5.77%**	3.73%	**7.01%**	4.94%
Discount rate – Canadian plans only	**5.41%**	3.50%	**5.40%**	3.28%
Rate of increase in future compensation[1][2]	**3.90%**	2.97%	**4.67%**	4.30%
Benefit expense (income) for the year				
Discount rate – All plans				
Discount rate for defined benefit obligations	**4.24%**	3.30%	**4.94%**	4.44%
Discount rate for net interest cost	**3.81%**	2.78%	**4.65%**	4.13%
Discount rate for service cost	**4.43%**	3.45%	**5.17%**	4.71%
Discount rate for interest on service cost	**3.98%**	2.96%	**5.07%**	4.54%
Discount rate – Canadian plans only				
Discount rate for defined benefit obligations	**4.08%**	3.05%	**3.28%**	2.57%
Discount rate for net interest cost	**3.59%**	2.47%	**2.82%**	2.11%
Discount rate for service cost	**4.18%**	3.16%	**3.64%**	2.94%
Discount rate for interest on service cost	**3.70%**	2.65%	**3.46%**	2.66%
Rate of increase in future compensation[1][2]	**2.79%**	2.74%	**4.30%**	4.31%
Health care cost trend rates at end of year				
Initial rate	**n/a**	n/a	**5.67%**	5.68%
Ultimate rate	**n/a**	n/a	**4.86%**	4.75%
Year ultimate rate reached	**n/a**	n/a	**2040**	2040
Assumed life expectancy in Canada (years)				
Life expectancy at 65 for current pensioners – male	**23.5**	23.5	**23.5**	23.5
Life expectancy at 65 for current pensioners – female	**24.6**	24.6	**24.6**	24.6
Life expectancy at 65, for future pensioners currently aged 45 – male	**24.5**	24.4	**24.5**	24.4
Life expectancy at 65, for future pensioners currently aged 45 – female	**25.5**	25.5	**25.5**	25.5
Assumed life expectancy in Mexico (years)				
Life expectancy at 65 for current pensioners – male	**21.6**	21.5	**21.6**	21.5
Life expectancy at 65 for current pensioners – female	**23.9**	23.9	**23.9**	23.9
Life expectancy at 65, for future pensioners currently aged 45 – male	**21.6**	21.6	**21.6**	21.6
Life expectancy at 65, for future pensioners currently aged 45 – female	**24.0**	24.0	**24.0**	24.0
Assumed life expectancy in United States (years)				
Life expectancy at 65 for current pensioners – male	**21.9**	21.8	**21.9**	21.8
Life expectancy at 65 for current pensioners – female	**23.3**	23.3	**23.3**	23.3
Life expectancy at 65, for future pensioners currently aged 45 – male	**23.3**	23.2	**23.3**	23.2
Life expectancy at 65, for future pensioners currently aged 45 – female	**24.7**	24.6	**24.7**	24.6

(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.

(2) The weighted average rates of increase in future compensation shown only consider long-term rates. In some regions, higher rates of increase are assumed in the short term but are not included in the weighted average rates disclosed.

g) Sensitivity analysis

The sensitivity analysis 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, 2022 ($ millions)	Benefit obligation	Benefit expense	Benefit obligation	Benefit expense
Impact of the following changes:				
1% decrease in discount rate	**$ 1,123**	**$ 102**	**$ 136**	**$ 3**
0.25% increase in rate of increase in future compensation	**58**	**4**	**–**	**–**
1% increase in health care cost trend rate	**n/a**	**n/a**	**102**	**12**
1% decrease in health care cost trend rate	**n/a**	**n/a**	**(84)**	**(9)**
1 year increase in Canadian life expectancy	**128**	**10**	**15**	**1**
1 year increase in Mexican life expectancy	**3**	**–**	**3**	**–**
1 year increase in the United States life expectancy	**2**	**–**	**2**	**–**

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 across 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. Derivatives are not a significant component of the investment strategy and cannot be used 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 Mexico.

The tables below show 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 2022**	Actual 2021	**Actual 2022**	Actual 2021
Cash and cash equivalents	**4%**	4%	**–%**	–%
Equity investments				
Quoted in an active market	**38%**	34%	**37%**	42%
Non quoted	**5%**	11%	**–%**	–%
	43%	45%	**37%**	42%
Fixed income investments				
Quoted in an active market	**4%**	6%	**58%**	58%
Non quoted	**36%**	35%	**–%**	–%
	40%	41%	**58%**	58%
Property				
Quoted in an active market	**–%**	–%	**5%**	–%
Non quoted	**1%**	1%	**–%**	–%
	1%	1%	**5%**	–%
Other				
Quoted in an active market	**–%**	–%	**–%**	–%
Non quoted	**12%**	9%	**–%**	–%
	12%	9%	**–%**	–%
Total	**100%**	100%	**100%**	100%

Target asset allocation at October 31, 2022 Asset category %	Pension plans	Other benefit plans
Cash and cash equivalents	**–%**	**–%**
Equity investments	**42%**	**38%**
Fixed income investments	**44%**	**57%**
Property	**1%**	**5%**
Other	**13%**	**–%**
Total	**100%**	**100%**

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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 four business lines: Canadian Banking, International Banking, Global Banking and Markets and Global Wealth Management. 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, 2022

Taxable equivalent basis ($ millions)	Canadian Banking	International Banking	Global Wealth Management	Global Banking and Markets	Other[1]	Total
Net interest income[2]	$ 9,001	$ 6,900	$ 764	$ 1,630	$ (180)	$ 18,115
Non-interest income[3][4]	3,029	2,827	4,617	3,542	(714)	13,301
Total revenues	12,030	9,727	5,381	5,172	(894)	31,416
Provision for credit losses	209	1,230	6	(66)	3	1,382
Depreciation and amortization	628	503	183	172	45	1,531
Non-interest expenses	4,760	4,709	3,076	2,502	524	15,571
Income tax expense	1,670	618	551	653	(734)	2,758
Net income	$ 4,763	$ 2,667	$ 1,565	$ 1,911	$ (732)	$ 10,174
Net income attributable to non-controlling interests in subsidiaries	–	249	9	–	–	258
Net income attributable to equity holders of the Bank	4,763	2,418	1,556	1,911	(732)	9,916
Average assets ($ billions)	430	207	33	445	167	1,282
Average liabilities ($ billions)	332	152	47	414	263	1,208

(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, 2022 amounting to $375 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) Card revenues and Banking services fees are mainly earned in Canadian and International Banking. Mutual fund, Brokerage fees and Investment management and trust fees are primarily earned in Global Wealth Management. Underwriting and other advisory fees are predominantly earned in Global Banking and Markets.
(4) Includes net income (on a taxable equivalent basis) from investments in associated corporations for Canadian Banking – $64; International Banking – $250; Global Wealth Management – $14 and Other – $(60).

For the year ended October 31, 2021

Taxable equivalent basis ($ millions)	Canadian Banking	International Banking	Global Wealth Management	Global Banking and Markets	Other[1]	Total
Net interest income[2]	$ 8,030	$ 6,625	$ 628	$ 1,436	$ 242	$ 16,961
Non-interest income[3][4]	2,868	2,993	4,752	3,587	91	14,291
Total revenues	10,898	9,618	5,380	5,023	333	31,252
Provision for credit losses	333	1,574	2	(100)	(1)	1,808
Depreciation and amortization	618	517	178	156	42	1,511
Non-interest expenses	4,333	4,737	3,077	2,302	658	15,107
Income tax expense	1,459	635	549	590	(362)	2,871
Net income	$ 4,155	$ 2,155	$ 1,574	$ 2,075	$ (4)	$ 9,955
Net income attributable to non-controlling interests in subsidiaries	–	332	9	–	(10)	331
Net income attributable to equity holders of the Bank	4,155	1,823	1,565	2,075	6	9,624
Average assets ($ billions)	381	194	29	401	152	1,157
Average liabilities ($ billions)	313	149	45	385	193	1,085

(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, 2021 amounting to $310 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) Card revenues and Banking services fees are mainly earned in Canadian and International Banking. Mutual fund, Brokerage fees and Investment management and trust fees are primarily earned in Global Wealth Management. Underwriting and other advisory fees are predominantly earned in Global Banking and Markets.
(4) Includes net income (on a taxable equivalent basis) from investments in associated corporations for Canadian Banking – $87; International Banking – $206; Global Wealth Management – $17 and Other – $29.

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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, 2022 ($ millions)[1]	Canada	United States	Mexico	Peru	Chile	Colombia	Caribbean and Central America	Other International	Total
Net interest income	$ 9,827	$ 945	$1,736	$ 1,171	$ 1,604	$ 631	$ 1,436	$ 765	$ 18,115
Non-interest income[1]	8,149	1,103	748	422	538	388	719	1,234	13,301
Total revenues[2]	17,976	2,048	2,484	1,593	2,142	1,019	2,155	1,999	31,416
Provision for credit losses	180	(13)	232	342	221	216	175	29	1,382
Non-interest expenses	9,928	1,040	1,223	628	870	682	1,335	1,396	17,102
Income tax expense	1,697	260	196	173	95	39	150	148	2,758
Subtotal	6,171	761	833	450	956	82	495	426	10,174
Net income attributable to non-controlling interests in subsidiaries	1	–	19	6	104	35	93	–	258
Net income attributable to equity holders of the Bank	$ 6,170	$ 761	$ 814	$ 444	$ 852	$ 47	$ 402	$ 426	$ 9,916
Total average assets ($ billions)	$ 765	$ 207	$ 46	$ 27	$ 53	$ 14	$ 32	$ 138	$ 1,282

(1) Includes net income from investments in associated corporations for Canada – $4, Peru – $7, Chile – $9, Caribbean and Central America – $90, and Other International – $158.
(2) Revenues are attributed to countries based on where services are performed or assets are recorded.

For the year ended October 31, 2021 ($ millions)[1]	Canada	United States	Mexico	Peru	Chile	Colombia	Caribbean and Central America	Other International	Total
Net interest income	$ 9,182	$ 742	$ 1,668	$ 1,186	$ 1,507	$ 692	$ 1,345	$ 639	$ 16,961
Non-interest income[1]	9,190	953	714	531	666	383	664	1,190	14,291
Total revenues[2]	18,372	1,695	2,382	1,717	2,173	1,075	2,009	1,829	31,252
Provision for credit losses	255	(33)	334	586	205	195	221	45	1,808
Non-interest expenses	9,627	915	1,202	662	943	682	1,343	1,244	16,618
Income tax expense	1,909	120	184	104	204	80	103	167	2,871
Subtotal	6,581	693	662	365	821	118	342	373	9,955
Net income attributable to non-controlling interests in subsidiaries	(10)	–	14	2	200	48	77	–	331
Net income attributable to equity holders of the Bank	$ 6,591	$ 693	$ 648	$ 363	$ 621	$ 70	$ 265	$ 373	$ 9,624
Total average assets ($ billions)	$ 695	$ 167	$ 41	$ 27	$ 53	$ 13	$ 30	$ 131	$ 1,157

(1) Includes net income from investments in associated corporations for Canada – $17, Peru – $10, Chile – $(15), Caribbean and Central America – $46, and Other International – $181.
(2) Revenues are attributed to countries based on where services are performed or assets are recorded.

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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)	2022	2021
Salaries and cash incentives[1]	**$ 24**	$ 21
Equity-based payment[2]	**36**	30
Pension and other benefits[1]	**4**	3
Total	**$ 64**	$ 54

(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.

Loans and deposits of key management personnel

As at October 31 ($ millions)	2022	2021
Loans	**$ 11**	$ 11
Deposits	**$ 5**	$ 5

The Bank's committed credit exposure to companies controlled by directors totaled $264.0 million as at October 31, 2022 (2021 – $252.8 million), while actual utilized amounts were $188.4 million (2021 – $189.6 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)	2022	2021
Net income / (loss)	**$ (29)**	$ (85)
Loans	**205**	191
Deposits	**286**	229
Guarantees and commitments	**96**	154

Scotiabank principal pension plan

The Bank manages assets of $4.9 billion (2021 – $4.7 billion) which is a portion of the Scotiabank principal pension plan assets and earned $6.4 million (2021 – $6.6 million) in fees.

31 Principal Subsidiaries and Non-Controlling Interests in Subsidiaries

(a) Principal subsidiaries[1]

The following table presents certain 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 2022	2021
Canadian			
1832 Asset Management L.P.	Toronto, Ontario	**$ 3,785**	$ 2,680
BNS Investments Inc.	Toronto, Ontario	**15,750**	15,200
Montreal Trust Company of Canada	Montreal, Quebec		
The Bank of Nova Scotia Trust Company	Toronto, Ontario	**214**	185
National Trust Company	Stratford, Ontario	**374**	366
Roynat Inc.	Calgary, Alberta	**594**	518
Scotia Capital Inc.	Toronto, Ontario	**3,215**	2,818
Scotia Dealer Advantage Inc.	Burnaby, British Columbia	**867**	729
Scotia Mortgage Corporation	Toronto, Ontario	**810**	750
Scotia Securities Inc.	Toronto, Ontario	**63**	53
Tangerine Bank	Toronto, Ontario	**3,827**	3,405
Jarislowsky, Fraser Limited	Montreal, Quebec	**988**	1,027
MD Financial Management Inc.	Ottawa, Ontario	**2,781**	2,761
International			
Scotiabank Colpatria S.A. (51%)	Bogota, Colombia	**842**	995
BNS International (Bahamas) Limited	Nassau, Bahamas	**17,180**	17,543
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 (Ireland) Designated Activity Company	Dublin, Ireland		
Grupo Financiero Scotiabank Inverlat, S.A. de C.V. (97.4%)	Mexico City, Mexico	**5,960**	4,714
Nova Scotia Inversiones Limitada	Santiago, Chile	**6,114**	5,173
Scotiabank Chile S.A. (99.79%)	Santiago, Chile		
Scotia Holdings (US) Inc.[2]	New York, New York		
Scotia Capital (USA) Inc.[2][3]	New York, New York		
Scotiabank Brasil S.A. Banco Multiplo	Sao Paulo, Brazil	**788**	280
Scotiabank Caribbean Holdings Ltd.	Bridgetown, Barbados	**1,550**	1,630
Scotia Group Jamaica Limited (71.8%)	Kingston, Jamaica		
The Bank of Nova Scotia Jamaica Limited	Kingston, Jamaica		
Scotiabank Trinidad and Tobago Limited (50.9%)	Port of Spain, Trinidad and Tobago		
Integra Properties Ltd, S.A. (formerly Scotiabank (Panama) S.A.)	Panama City, Panama		
Scotiabank Uruguay S.A.	Montevideo, Uruguay	**478**	440
Scotiabank Europe plc	London, United Kingdom	**2,478**	2,273
Scotia Peru Holdings S.A.	Lima, Peru	**4,961**	4,277
Scotiabank Peru S.A.A. (99.31%)	Lima, Peru		
Profuturo AFP S.A.	Lima, Peru		
Scotiabank Republica Dominicana, S.A. – Banco Multiple (99.80%)	Santo Domingo, Dominican Republic	**906**	775
Scotiabank (Barbados) Limited	Bridgetown, Barbados	**273**	235

(1) The Bank (or immediate parent of an entity) owns 100% of the outstanding voting shares of each subsidiary unless otherwise noted.
(2) The carrying value of this subsidiary is included with that of its parent, BNS Investments Inc.
(3) 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 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.

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(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				
	2022			2021	
	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.	**0.21%**[1]	**$ 227**	**$ 27**	$ 790	$ 55
Scotiabank Colpatria S.A.[2]	**49.0%**	**332**	**12**	405	–
Scotia Group Jamaica Limited	**28.2%**	**279**	**10**	261	12
Scotiabank Trinidad and Tobago Limited	**49.1%**	**413**	**52**	367	56
Other	**0.1% – 49.0%**[3]	**273**	**14**	267	–
Total		**$ 1,524**	**$ 115**	$ 2,090	$ 123

(1) The Bank increased its ownership in Scotiabank Chile S.A. in 2022 by acquiring an additional 6.8% stake from the non-controlling shareholder. Refer to Note 36 for details.
(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, 2022				As at and for the year ended October 31, 2021			
($ millions)	Revenue	Total comprehensive income (loss)	Total assets	Total liabilities	Revenue	Total comprehensive income (loss)	Total assets	Total liabilities
Total	**$ 3,849**	**$ 880**	**$ 93,880**	**$ 85,754**	$ 3,875	$ 6	$ 86,317	$ 78,973

32 Interest Income and Expense

For the year ended October 31 ($ millions)	2022		2021	
	Interest income	Interest expense	Interest income	Interest expense
Measured at amortized cost[1]	**$ 31,036**	**$ 15,273**	$ 23,831	$ 7,844
Measured at FVOCI[1]	**1,537**	**–**	716	–
	32,573	**15,273**	24,547	7,844
Other	**985**[2]	**170**[3]	439[2]	181[3]
Total	**$ 33,558**	**$ 15,443**	$ 24,986	$ 8,025

(1) The interest income/expense on financial assets/liabilities are calculated using the effective interest method.
(2) Includes dividend income on equity securities.
(3) The interest on lease liabilities was $107 (2021 – $105).

33 Earnings Per Share

For the year ended October 31 ($ millions)	2022	2021
Basic earnings per common share		
Net income attributable to common shareholders	**$ 9,656**	$ 9,391
Weighted average number of common shares outstanding (millions)	**1,199**	1,214
Basic earnings per common share[1] (in dollars)	**$ 8.05**	$ 7.74
Diluted earnings per common share		
Net income attributable to common shareholders	**$ 9,656**	$ 9,391
Dilutive impact of share-based payment options and others[2]	**36**	43
Net income attributable to common shareholders (diluted)	**$ 9,692**	$ 9,434
Weighted average number of common shares outstanding (millions)	**1,199**	1,214
Dilutive impact of share-based payment options and others[2] (millions)	**9**	11
Weighted average number of diluted common shares outstanding (millions)	**1,208**	1,225
Diluted earnings per common share[1] (in dollars)	**$ 8.02**	$ 7.70

(1) Earnings per share calculations are based on full dollar and share amounts.
(2) Certain 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.

34 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)	2022 Maximum potential amount of future payments[1]	2021 Maximum potential amount of future payments[1]
Standby letters of credit and letters of guarantee	**$ 41,977**	$ 37,277
Liquidity facilities	**6,361**	4,942
Indemnifications	**926**	1,306

(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.

(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) 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.

(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.

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)	2022	2021
Commercial letters of credit	**$ 1,219**	$ 1,320
Commitments to extend credit[1]		
Original term to maturity of one year or less	**81,641**	74,053
Original term to maturity of more than one year	**186,067**	165,726
Securities lending	**52,178**	59,506
Securities purchase and other commitments	**1,105**	1,040
Total	**$ 322,210**	$ 301,645

(1) Includes liquidity facilities.

(c) 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)	2022	2021
Assets pledged to:		
Bank of Canada[1]	**$ 168**	$ 184
Foreign governments and central banks[1]	**2,015**	2,589
Clearing systems, payment systems and depositories[1]	**1,628**	1,345
Assets pledged in relation to exchange-traded derivative transactions	**8,972**	6,105
Assets pledged in relation to over-the-counter derivative transactions	**29,658**	16,018
Assets pledged as collateral related to securities borrowing and lending	**133,363**	160,794
Assets pledged in relation to covered bond program (Note 15)[2]	**51,446**	34,683
Assets pledged in relation to other securitization programs (Note 15)	**1,397**	2,680
Assets pledged under CMHC programs (Note 14)	**24,886**	26,932
Other	**969**	1,140
Total assets pledged	**$ 254,502**	$ 252,470
Obligations related to securities sold under repurchase agreements[3]	**122,552**	100,083
Total[4]	**$ 377,054**	$ 352,553

(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) Excludes mortgages related to covered bonds held by the Bank or pledged to the Bank of Canada as part of its term repo program.
(3) Includes the Bank of Canada term repo program.
(4) Includes assets that have been received from counterparties through normal course of business in securities financing and derivative transactions.

(d) 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.

35 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, 2022:

- 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 facility 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).

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(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 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 and appropriate margin of conservatism, for probability of default (PD), loss given default (LGD) and exposure at default (EAD).

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 take into account other factors such as specific provisions for defaulted exposures, eligible collateral, and loan-to-value for real estate secured retail exposures.

As at October 31 ($ millions)	2022				2021
	Exposure at default[1]				
Category	Drawn[2]	Undrawn commitments	Other exposures[3]	Total	Total
By counterparty type					
Non-retail					
AIRB portfolio					
Corporate	$ 233,214	$ 123,347	$ 96,865	$ 453,426	$ 372,462
Bank	16,812	4,739	15,874	37,425	35,792
Sovereign	223,678	1,170	9,308	234,156	213,300
	473,704	129,256	122,047	725,007	621,554
Standardized portfolio					
Corporate[4]	48,804	2,879	8,183	59,866	63,647
Bank	3,752	26	10	3,788	3,064
Sovereign	8,718	34	231	8,983	8,773
	61,274	2,939	8,424	72,637	75,484
Total non-retail	$ 534,978	$ 132,195	$ 130,471	$ 797,644	$ 697,038
Retail					
AIRB portfolio					
Real estate secured	232,133	22,435	–	254,568	227,927
Qualifying revolving	16,018	30,417	–	46,435	41,771
Other retail	33,696	4,214	–	37,910	36,207
	$ 281,847	$ 57,066	$ –	$ 338,913	$ 305,905
Standardized portfolio					
Real estate secured	63,054	–	–	63,054	54,617
Other retail[4]	47,242	847	–	48,089	36,445
	110,296	847	–	111,143	91,062
Total retail	$ 392,143	$ 57,913	$ –	$ 450,056	$ 396,967
Total	$ 927,121	$ 190,108	$ 130,471	$ 1,247,700	$ 1,094,005
By geography[5]					
Canada	$ 549,356	$ 119,722	$ 40,971	$ 710,049	$ 639,748
United States	146,109	50,517	51,046	247,672	194,424
Chile	54,234	1,326	4,968	60,528	54,777
Mexico	45,988	1,522	3,283	50,793	38,422
Peru	27,789	1,147	3,240	32,176	28,152
Colombia	11,951	384	956	13,291	14,446
Other International					
Europe	21,158	7,459	17,539	46,156	47,179
Caribbean	29,482	1,487	1,088	32,057	27,673
Latin America (other)	17,649	1,336	1,905	20,890	14,080
All other	23,405	5,208	5,475	34,088	35,104
Total	$ 927,121	$ 190,108	$ 130,471	$ 1,247,700	$ 1,094,005

(1) Exposure at default is presented after credit risk mitigation. Exposures exclude equity securities and other assets. Portfolios under the Standardized Approach are reported net of specific allowances for credit losses and net of collateral amounts treated under the Comprehensive Approach.
(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 $32.3 million first loss protection (2021 – $22.3 million), 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) During the year, certain small business loans were reclassified from Non-retail to Retail based on regulatory definitions. The prior period has not been restated.
(5) 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 in 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, 2022 ($ 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	$ 62,551	$ –	$ –	$ –	$ –	$ –	$ –	$ –	$ 3,344	$ 65,895
Precious metals	–	–	–	–	–	–	–	543	–	543
Trading assets										
Securities	(4)	–	–	–	–	–	–	103,551	–	103,547
Loans	408	–	–	–	–	–	367	7,403	–	7,811
Other	–	–	–	–	–	–	–	1,796	–	1,796
Financial assets designated at fair value through profit or loss	–	–	–	–	–	–	–	–	–	–
Securities purchased under resale agreements and securities borrowed	–	–	–	175,313	–	–	–	–	–	175,313
Derivative financial instruments	–	–	–	–	55,699	–	43,436	–	–	55,699
Investment securities	108,516	–	–	–	–	5,081	–	–	(3,589)	110,008
Loans:										
Residential mortgages[2]	76,607	272,588	–	–	–	–	–	–	84	349,279
Personal loans	–	96,074	3,350	–	–	–	–	–	7	99,431
Credit cards	–	13,126	372	–	–	–	–	–	1,020	14,518
Business & government	267,921	10,395	9,675	–	–	–	–	–	(884)	287,107
Allowances for credit losses[3]	(514)	(817)	–	–	–	–	–	–	(4,017)	(5,348)
Customers' liability under acceptances	19,525	–	–	–	–	–	–	–	(31)	19,494
Property and equipment	–	–	–	–	–	–	–	–	5,700	5,700
Investment in associates	–	–	–	–	–	56	–	–	2,577	2,633
Goodwill and other intangibles assets	–	–	–	–	–	–	–	–	16,833	16,833
Other (including Deferred tax assets)	2,401	991	–	106	–	–	–	–	35,661	39,159
Total	$537,411	$392,357	$ 13,397	$ 175,419	$ 55,699	$5,137	$ 43,803	$ 113,293	$ 56,705	$ 1,349,418

(1) Includes the Bank's insurance subsidiaries' assets and all other assets which are not subject to credit and market risks.
(2) Includes $75.8 billion in mortgages guaranteed by Canada Mortgage Housing Corporationand federally backed 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, 2021 ($ 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	$ 83,176	$ –	$ –	$ –	$ –	$ –	$ –	$ –	$ 3,147	$ 86,323
Precious metals	–	–	–	–	–	–	–	755	–	755
Trading assets										
Securities	1	–	–	–	–	–	–	137,147	–	137,148
Loans	470	–	–	–	–	–	397	7,643	–	8,113
Other	–	–	–	–	–	–	–	1,051	–	1,051
Financial assets designated at fair value through profit or loss	–	–	–	–	–	–	–	–	–	–
Securities purchased under resale agreements and securities borrowed	–	–	–	127,739	–	–	–	–	–	127,739
Derivative financial instruments	–	–	–	–	42,302	–	35,379	–	–	42,302
Investment securities	70,193	–	–	–	–	4,373	–	–	633	75,199
Loans:										
Residential mortgages[2]	77,773	241,833	–	–	–	–	–	–	72	319,678
Personal loans	–	89,518	2,015	–	–	–	–	–	7	91,540
Credit cards	–	10,842	136	–	–	–	–	–	1,472	12,450
Business & government	208,967	4,025	5,861	–	–	–	–	–	91	218,944
Allowances for credit losses[3]	(552)	(759)	–	–	–	–	–	–	(4,315)	(5,626)
Customers' liability under acceptances	20,441	–	–	–	–	–	–	–	(37)	20,404
Property and equipment	–	–	–	–	–	–	–	–	5,621	5,621
Investment in associates	–	–	–	–	–	46	–	–	2,558	2,604
Goodwill and other intangibles assets	–	–	–	–	–	–	–	–	16,604	16,604
Other (including Deferred tax assets)	1,772	659	–	2	–	–	–	–	21,562	23,995
Total	$ 462,241	$ 346,118	$ 8,012	$ 127,741	$ 42,302	$ 4,419	$ 35,776	$ 146,596	$ 47,415	$ 1,184,844

(1) Includes the Bank's insurance subsidiaries' assets and all other assets which are not subject to credit and market risks.
(2) Includes $78.1 billion in mortgages guaranteed by Canada Mortgage Housing Corporationand federally backed privately insured mortgages.
(3) 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, 2022, and October 31, 2021, 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, 2021.

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% – 0.0551%
AA to A+	Aa2 to A1	AA to A (high)		95	0.0551% – 0.0651%
A to A-	A2 to A3	A to A (low)	Investment grade	90	0.0651% – 0.0748%
BBB+	Baa1	BBB (high)		87	0.0748% – 0.1028%
BBB	Baa2	BBB		85	0.1028% – 0.1552%
BBB-	Baa3	BBB (low)		83	0.1552% – 0.2151%
BB+	Ba1	BB (high)		80	0.2151% – 0.2983%
BB	Ba2	BB		77	0.2983% – 0.5617%
BB-	Ba3	BB (low)	Non-Investment grade	75	0.5617% – 1.1570%
B+	B1	B (high)		73	1.1570% – 1.9519%
B to B-	B2 to B3	B to B (low)		70	1.9519% – 4.7225%
CCC+	Caa1	–		65	4.7225% – 12.1859%
CCC	Caa2	–	Watch list	60	12.1859% – 23.8197%
CCC- to CC	Caa3 to Ca	–		40	23.8197% – 42.1638%
–	–	–		30	42.1638% – 100.0000%
Default			Default	21	100%

(1) Applies to non-retail portfolio.
(2) PD Ranges as at October 31, 2022. The Range does not include the upper boundary for the row.

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:

		2022				2021
		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**	**$ 117,445**	**$ 1,986**	**$ 19,133**	**$ 138,564**	$ 116,190
	95	**32,559**	**12,484**	**25,532**	**70,575**	62,265
	90	**28,263**	**21,482**	**28,470**	**78,215**	75,537
	87	**43,848**	**24,277**	**17,063**	**85,188**	64,634
	85	**36,912**	**21,943**	**14,236**	**73,091**	52,838
	83	**50,728**	**20,387**	**7,754**	**78,869**	56,540
Non-Investment grade	**80**	**34,036**	**14,691**	**4,130**	**52,857**	47,700
	77	**27,388**	**6,381**	**2,519**	**36,288**	33,774
	75	**19,556**	**3,709**	**2,447**	**25,712**	22,822
	73	**6,137**	**1,263**	**448**	**7,848**	8,449
	70	**2,022**	**449**	**121**	**2,592**	2,814
Watch list	**65**	**300**	**14**	**81**	**395**	1,302
	60	**740**	**39**	**9**	**788**	1,626
	40	**744**	**98**	**39**	**881**	696
	30	**52**	**2**	**–**	**54**	92
Default	**21**	**1,107**	**51**	**62**	**1,220**	1,228
Total		**$ 401,837**	**$ 129,256**	**$ 122,044**	**$ 653,137**	$ 548,507
Government guaranteed residential mortgages[3]		**71,867**	**–**	**–**	**71,867**	73,044
Total		**$ 473,704**	**$ 129,256**	**$ 122,044**	**$ 725,004**	$ 621,551

(1) After credit risk mitigation.
(2) Includes off-balance sheet lending instruments such as letters of credit, letters of guarantee, securitizations excluding $3.5 million first loss protection (2021 – $3.5 million), 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 weighted 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, 2022 comprised of drawn, undrawn and other exposures to corporate, bank and sovereign counterparties amounted to $73 billion (October 31, 2021 – $75 billion). Within this portfolio, the majority of Corporate/Commercial exposures are to unrated counterparties, mainly in Canada and the Pacific Alliance countries.

(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, 2022, 28% of the Canadian banking residential mortgage portfolio is insured and the average loan-to-value ratio of the uninsured portion of the portfolio is 49%.

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)	2022						2021
	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%**	**$ 63,677**	**$ 24,644**	**$ 12,865**	**$ 853**	**$ 102,039**	$ 91,426
Very Low	**0.0500% – 0.1999%**	**87,387**	**14,544**	**11,085**	**5,358**	**118,374**	106,994
Low	**0.2000% – 0.9999%**	**48,158**	**4,522**	**12,018**	**20,145**	**84,843**	77,215
Medium Low	**1.0000% – 2.9999%**	**9,569**	**–**	**5,522**	**7,157**	**22,248**	20,744
Medium	**3.0000% – 9.9999%**	**729**	**430**	**4,160**	**3,335**	**8,654**	7,316
High	**10.0000% – 19.9999%**	**263**	**72**	**223**	**565**	**1,123**	917
Extremely High	**20.0000% – 99.9999%**	**328**	**47**	**452**	**336**	**1,163**	863
Default	**100%**	**143**	**55**	**110**	**161**	**469**	430
Total		**$ 210,254**	**$ 44,314**	**$ 46,435**	**$ 37,910**	**$ 338,913**	$ 305,905

(1) After credit risk mitigation.

Retail standardized portfolio

The retail standardized portfolio of $111 billion as at October 31, 2022 (2021 – $91 billion) was comprised of residential mortgages, personal loans, credit cards and lines of credit to individuals, mainly in the Latin American and Caribbean region. Commencing in the third quarter, small business loans of $7 billion have been included as other regulatory retail. Of the total retail standardized exposures, $63 billion (2021 – $55 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, 2022, the approximate market value of cash and securities collateral accepted that may be sold or repledged by the Bank was $259 billion (2021 – $192 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 $273 billion (2021 – $227 billion), of which approximately $58 billion was not sold or re-pledged (2021 – $55 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 34(c) 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, 2022 was $274 million (2021 – $257 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. 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 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.

(i) Non-trading interest rate risk

Interest rate 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 and changes in customer preferences (e.g. mortgage prepayment rates). 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 equity. The income limit measures the effect of a specified shift 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 calculations are based on models that consider a number of inputs and are 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 pre-tax impact on the Bank's net interest income over the next twelve months and economic value of equity of an immediate and sustained 100 basis points increase and decrease in interest rates across major currencies as defined by the Bank. Corresponding with the current interest rate environment, the net interest income and economic value for a down shock scenario are measured using 100 basis points decline. These calculations are based on models that consider a number of inputs and are on a constant balance sheet and make no assumptions for management actions to mitigate the risk.

As at October 31 ($ millions)	2022							2021(1)		
	Net interest income			Economic value of equity						
	Canadian dollar	Other currencies	Total	Canadian dollar	Other currencies	Total		Net interest income	Economic value of equity
100 bp increase	**$ (118)**	**$ (222)**	**$ (340)**	**$ (800)**	**$ (1,221)**	**$ (2,021)**	100 bp increase	$ 212	$ (1,173)
100 bp decrease	**$ 127**	**$ 199**	**$ 326**	**$ 606**	**$ 1,053**	**$ 1,659**	25 bp decrease	$ (64)	$ 209

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

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(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, 2022, 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 $55 million (October 31, 2021 – $43 million) in the absence of hedging activity, due primarily from exposure to U.S. dollars. A similar change in the Canadian dollar as at October 31, 2022 would increase (decrease) the unrealized foreign currency translation losses in the accumulated other comprehensive income in equity by approximately $308 million (2021 – $321 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 and VaR 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, 2022			
($ millions)	**As at October 31, 2022**	Average	High	Low	As at October 31, 2021
Credit spread plus interest rate	**$ 9.3**	**$ 12.0**	**$ 19.0**	**$ 7.2**	$ 10.3
Credit spread	**7.7**	**5.3**	**9.6**	**2.0**	2.0
Interest rate	**8.4**	**11.4**	**19.6**	**5.7**	11.5
Equities	**3.4**	**4.0**	**6.8**	**1.7**	6.7
Foreign exchange	**1.5**	**2.1**	**5.3**	**0.8**	2.0
Commodities	**5.2**	**3.1**	**5.8**	**1.0**	1.3
Debt specific	**4.6**	**2.3**	**4.6**	**1.6**	1.5
Diversification effect	**(10.6)**	**(10.0)**	**n/a**	**n/a**	(8.6)
All-Bank VaR	**$ 13.4**	**$ 13.5**	**$ 20.4**	**$ 7.8**	$ 13.2
All-Bank stressed VaR	**$ 27.4**	**$ 30.9**	**$ 58.4**	**$ 16.8**	$ 36.1

Below are the market risk capital requirements as at October 31, 2022.

($ millions)	
All-Bank VaR	**$ 131**
All-Bank stressed VaR	**324**
Incremental risk charge	**345**
Standardized approach	**66**
Total market risk capital	**$ 866**(1)

(1) Equates to $10,820 million of risk-weighted assets (October 31, 2021 – $8,112 million).

(d) 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 third party risk management and legal risk but excludes strategic risk and reputational risk. It also exists in some form in each of the Bank's business and support activities, and third parties to whom activities have been outsourced. It can result in financial loss, regulatory sanctions and damage to the Bank's reputation. The Bank's Operational Risk Management Framework outlines the Bank's structured approach for effective management of enterprise-wide operational risk in a manner consistent with best practices and regulatory requirements.

36 Acquisitions and Divestitures

Acquisitions

Scotiabank Chile

In the second quarter, the Bank completed the acquisition of an additional 16.8% stake in Scotiabank Chile for $1.2 billion from the non-controlling interest shareholders, increasing its ownership to 99.8%. The purchase consideration was comprised of cash of $650 million and the issuance of 7 million common shares valued at $569 million. The increase in ownership was effective February 27, 2022. This transaction was accounted for as a capital transaction through shareholders' equity and did not result in a change to the carrying value of the assets and liabilities of the subsidiary or the Bank's associated goodwill.

As at the date of acquisition, the transaction negatively impacted the Bank's CET1 ratio by 11 basis points. Scotiabank Chile forms part of the International Banking business segment.

Completed acquisition impacting 2021

Scotiabank Chile

On May 12, 2021, the Bank increased its ownership in Scotiabank Chile through the acquisition of an additional 7.0% stake from the non-controlling interest shareholder for $481 million, resulting in ownership of 83% in Scotiabank Chile. This transaction was accounted for as a capital transaction through shareholders' equity and did not result in a change to the carrying value of the assets and liabilities of the subsidiary or the Bank's associated goodwill.

The transaction negatively impacted Scotiabank's CET1 ratio by six basis points. Scotiabank Chile forms part of the International Banking business segment.

Divestitures

Closed divestitures impacting the current fiscal year

Banco del Caribe, C.A ("BDC") and Inversiones Americana del Caribe (IAC), B.V. ("IAC"), Venezuela

On October 26, 2022, the Bank completed the sale of its 26.8% interest in BDC and its 23.4% interest in IAC subject to customary closing conditions.

The investments held by the Bank in BDC and IAC, were classified as investments in associates. The carrying value of the Bank's interest in these investments of $73 million was derecognized on the date of close and a net loss of approximately $227 million after-tax was recorded in non-interest income-other and reported in the Other segment. The net loss includes $169 million of cumulative foreign currency translation losses that have been reclassified from accumulated other comprehensive income to the Consolidated Statement of Income. The capital impact of these transactions was not significant.

Thanachart Insurance Public Company Limited ("TNI") and Thanachart Securities Public Company Limited ("TNS"), Thailand

On October 27, 2022, the Bank completed the sale of its interest in TNI and TNS.

The investments held by the Bank in TNI and TNS were classified as investments in associates. The carrying value of the Bank's interest in these investments of $134 million was derecognized on the date of close. The financial and capital impacts of this transaction were not significant.

Wind down of operations in India and Malaysia

The Bank has made the decision to wind down its operations in India and Malaysia as part of the realignment of Global Banking and Markets business in the Asia Pacific region. The Bank has recorded a total loss of $102 million after tax in non-interest income-other representing the reclassification of cumulative foreign currency translation losses net of hedges, from accumulated other comprehensive income to the Consolidated Statement of Income. The capital impact of this transaction was not significant.

Closed divestitures impacting the prior fiscal year

2021

Operations in Belize

On March 31, 2021, the Bank completed the sale of its 100% interest in Scotiabank (Belize) Ltd. to Caribbean Investment Holdings Limited, upon receiving regulatory approvals and satisfying closing conditions.

All assets and liabilities related to this operation were derecognized on the closing date. The net impact to the Bank of this transaction was not significant.

Operations in Antigua and Barbuda

On September 1, 2021, the Bank announced that it has completed the sale of its banking operations in Antigua and Barbuda to Eastern Caribbean Amalgamated Bank Limited, upon receiving regulatory approvals and satisfying closing conditions.

All assets and liabilities related to this operation were derecognized on the closing date. The net impact to the Bank of this transaction is not significant.

Divestiture previously announced that will no longer impact the Bank's financial results

Operations in Guyana

On June 9, 2022, the Bank announced that the agreement for the sale of its banking operations in Guyana to First Citizens Bank Limited, initially signed on March 3, 2021, has expired and has therefore been terminated in accordance with its terms.

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, 2022, 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
Group Head and Chief Financial Officer

Toronto, Canada
November 29, 2022

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Directors of The Bank of Nova Scotia

Opinion on Internal Control Over Financial Reporting

We have audited The Bank of Nova Scotia's internal control over financial reporting as of October 31, 2022, 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 of Nova Scotia (the Bank) maintained, in all material respects, effective internal control over financial reporting as of October 31, 2022, based on the criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated statements of financial position of the Bank as of October 31, 2022, and 2021, the related consolidated statements of income, comprehensive income, changes in equity and cash flows for the years then ended, and the related notes (collectively, the consolidated financial statements) and our report dated November 29, 2022 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Bank's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included under the heading "Management's Report on Internal Control Over Financial Reporting" above. Our responsibility is to express an opinion on the Bank's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Bank in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.



Chartered Professional Accountants, Licensed Public Accountants

Toronto, Canada
November 29, 2022

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 Governance section of the Bank's website (https://www.scotiabank.com/ca/en/about/our-company/governance.html).

The Corporate Governance Policies and the committee charters are available in the Board of Directors section of the Bank's website and in print to any shareholder who requests a copy from the Bank's Corporate 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 current position as President and Chief Executive Officer of the Bank. L. Scott Thomson is non-independent due to his appointment as incoming President of the Bank effective December 1, 2022 and will assume the role of President and Chief Executive Officer of the Bank on February 1, 2023.

That means, 12 of the current 14 (or 86%) Directors are independent, including Aaron W. Regent, the Chair of the Board as of November 29, 2022.

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 meetings held in fiscal 2022.

The following Directors are independent: Nora A. Aufreiter, Guillermo E. Babatz, Scott B. Bonham, Daniel (Don) H. Callahan, W. Dave Dowrich, Lynn K. Patterson, Michael D. Penner, Una M. Power, Aaron W. Regent, Calin Rovinescu, Susan L. Segal 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 current 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 judgement 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 (Canada).

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 (the Bank)

We, consent to the use of:

i) our report of independent registered public accounting firm dated November 29, 2022 to the Shareholders and the Board of Directors of the Bank on the consolidated financial statements of the Bank, which comprise the consolidated statements of financial position as of October 31, 2022 and 2021, the related consolidated statements of income, comprehensive income, changes in equity and cash flows for the years then ended, and the related notes; and

ii) our report of independent registered public accounting firm dated November 29, 2022 to the Shareholders and the Board of Directors of the Bank on the effectiveness of internal control over financial reporting as of October 31, 2022.

each of which is included in this Annual Report on Form 40-F of the Bank for the fiscal year ended October 31, 2022.

We, also consent to the incorporation by reference of the above-mentioned reports in the Registration Statement on Form S-8 (No. 333-199099) of the Bank.

We also consent to the incorporation by reference of the above-mentioned reports and to the reference to our firm under the heading “Experts” in the Registration Statement on Form F-3/A (No. 333-261476) of the Bank.

/s/ KPMG LLP

Chartered Professional Accountants, Licensed Public Accountants

Toronto, Canada
November 29, 2022

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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 29, 2022

/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 29, 2022

/s/ Rajagopal Viswanathan
Rajagopal Viswanathan
Group Head 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, 2022 (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 29, 2022

/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, 2022 (the "Report") as filed with the U.S. Securities and Exchange Commission,

I, Rajagopal Viswanathan, Group Head 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 29, 2022

/s/ Rajagopal Viswanathan
Rajagopal Viswanathan
Group Head and Chief Financial Officer