

## 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](http://www.scotiabank.com/investorrelations).

Reference Table for EDTF			Pages		
			MD&A	Financial Statements	Supplementary Regulatory Capital Disclosures
Type of risk	Number	Disclosure			
General	1	The index of risks to which the business is exposed.	78, 82, 91		
	2	The Bank's risk to terminology, measures and key parameters.	74-77		
	3	Top and emerging risks, and the changes during the reporting period.	80-81, 87-90		
	4	Discussion on the regulatory development and plans to meet new regulatory ratios.	55-57, 99-100, 116-117		
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.	74-77		
	7	Description of key risks from the Bank's business model.	78-79		
	8	Stress testing use within the Bank's risk governance and capital management.	75		
Capital Adequacy and risk-weighted assets	9	Pillar 1 capital requirements, and the impact for global systemically important banks.	55-57	209	4
	10	a) Regulatory capital components.	58		49-50
		b) Reconciliation of the accounting balance sheet to the regulatory balance sheet.			15
	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		51
	12	Discussion of targeted level of capital, and the plans on how to establish this.	55-57		
	13	Analysis of risk-weighted assets by risk type, business, and market risk RWAs.	63-67, 79, 126	180, 234	6, 24-27, 54, 60
	14	Analysis of the capital requirements for each Basel asset class.	63-67	180, 228-234	13-14, 22, 38, 42
	15	Tabulate credit risk in the Banking Book.	63-67	229	13-14, 22, 38, 42
16	Flow statements reconciling the movements in risk-weighted assets for each risk-weighted asset type.	63-67		53	
17	Discussion of Basel III Back-testing requirement including credit risk model performance and validation.	65-66		30-33	
Liquidity Funding	18	Analysis of the Bank's liquid assets.	97-100		
	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.	101-102		
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	233-234	
	24	Discussion of changes in period on period VaR results as well as VaR assumptions, limitations, backtesting and validation.	92-97	233-234	
	25	Other risk management techniques e.g. stress tests, stressed VaR, tail risk and market liquidity horizon.	92-97	234	
Credit Risk	26	Analysis of the aggregate credit risk exposures, including details of both personal and wholesale lending.	87-90, 120-126	189-191, 230-232	22, 38, 42
	27	Discussion of the policies for identifying impaired loans, defining impairments and renegotiated loans, and explaining loan forbearance policies.		153-158, 191	
	28	Reconciliations of the opening and closing balances of impaired loans and impairment allowances during the year.	86, 120-121, 123, 124	191	18-19
	29	Analysis of counterparty credit risk that arises from derivative transactions.	84-85	178, 181	
	30	Discussion of credit risk mitigation, including collateral held for all sources of credit risk.	84-85, 87		
Other risks	31	Quantified measures of the management of operational risk.	67, 106		
	32	Discussion of publicly known risk items.	71		

# Table of Contents

- 17 Forward-looking statements
- 18 Non-GAAP measures
- 23 Financial highlights

## Overview of Performance

- 24 Financial results: 2018 vs 2017
- 24 Medium-term objectives
- 24 Shareholder returns
- 25 Economic outlook
- 25 Impact of foreign currency translation

## Group Financial Performance

- 26 Basis of presentation
- 26 Net income
- 26 Net interest income
- 28 Non-interest income
- 29 Provision for credit losses
- 31 Non-interest expenses
- 32 Income taxes
- 33 Financial results review: 2017 vs 2016
- 35 Fourth quarter review
- 37 Trending analysis

## Business Line Overview

- 38 Overview
- 40 Canadian Banking
- 44 International Banking
- 49 Global Banking and Markets
- 52 Other

## Group Financial Condition

- 54 Statement of financial position
- 55 Capital management
- 67 Off-balance sheet arrangements
- 70 Financial instruments
- 71 Selected credit instruments – publically known risk items

## Risk Management

- 72 Risk management framework
- 82 Credit risk
- 91 Market risk
- 97 Liquidity risk
- 106 Other risks

## Controls and Accounting Policies

- 110 Controls and procedures
- 110 Critical accounting estimates
- 114 Future accounting developments
- 116 Regulatory developments
- 117 Related party transactions

## Supplementary Data

- 119 Geographic information
- 122 Credit risk
- 127 Revenues and expenses
- 129 Selected quarterly information
- 130 Eleven-year statistical review

## FORWARD LOOKING STATEMENTS

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

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

We caution readers not to place undue reliance on these statements as a number of risk factors, many of which are beyond our control and effects of which can be difficult to predict, could cause our actual results to differ materially from the expectations, targets, estimates or intentions expressed in such forward-looking statements.

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

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

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

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

November 27, 2018

## MANAGEMENT'S DISCUSSION & ANALYSIS

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

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

### Non-GAAP Measures

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

### Adjusted results and diluted earnings per share

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

1. Acquisition-related costs – In 2018, the Bank acquired the following: Jarislowsky, Fraser Limited, and MD Financial Management in Canadian Banking; and BBVA Chile and Citibank consumer and small and medium enterprise operations, Colombia in International Banking. Acquisition-related costs are defined below.
  - Day 1 provision for credit losses on acquired performing financial instruments, as required by IFRS 9. The standard does not differentiate between originated and purchased performing loans and as such, requires the same accounting treatment for both.
  - Integration costs – These include costs that are incurred on the current year's acquisitions and related to integrating the acquired operations and will not form part of continuing operations once integration is complete.
  - Amortization of acquisition-related intangible assets, excluding software, relating to current and past acquisitions.
2. Restructuring charge incurred in 2016.

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

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

(1) Recorded in provision for credit losses.

(2) Recorded in non-interest expenses.

**T2** Reconciliation of reported and adjusted results and diluted earnings per share by business line**Canadian Banking<sup>(1)</sup>**

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

(1) Refer to Business Line Overview on page 38.

(2) Recorded in provision for credit losses.

(3) Recorded in non-interest expenses.

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

**International Banking<sup>(1)</sup>**

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

(1) Refer to Business Line Overview on page 38.

(2) Recorded in provision for credit losses.

(3) Recorded in non-interest expenses.

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

**Other<sup>(1)</sup>**

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

(1) Refer to Business Line Overview on page 38.

(2) Recorded in non-interest expenses.

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

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

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

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

**Core banking assets**

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

**Core banking margin**

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

### T3 Financial highlights

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

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

(2) Refer to page 18 for a discussion of Non-GAAP measures.

(3) As at October 31, 2018, credit valuation adjustment (CVA) risk-weighted assets were calculated using scalars of 0.80, 0.83 and 0.86 to compute CET1, Tier 1 and Total Capital ratios, respectively (scalars of 0.72, 0.77, and 0.81 in 2017, scalars 0.64, 0.71, 0.77 in 2016).

(4) Excludes loans acquired under the Federal Deposit Insurance Corporation (FDIC) guarantee related to the acquisition of R-G Premier Bank of Puerto Rico, prior to 2018.

(5) Includes allowance for credit losses on all financial assets – loans, acceptances, off-balance sheet exposures, debt securities, and deposits with financial institutions.

(6) Includes provision for credit losses on certain financial assets – loans, acceptances, and off-balance sheet exposures.

(7) Based on the average of the high and low common share price for the year.

## Overview of Performance

### Financial Results: 2018 vs 2017

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

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

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

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

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

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

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

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

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

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

### Medium-term financial objectives

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

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

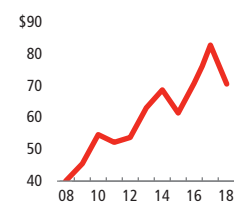
### Shareholder Returns

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

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

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

C1 Closing common share price as at October 31



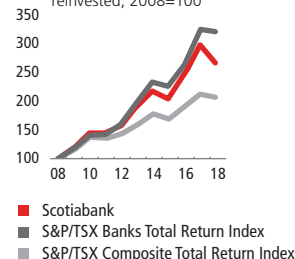
**T4** Shareholder returns

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

(1) Dividend yield is calculated as the dividend paid divided by the average of the high and low common share price for the year.

(2) Total annual shareholder return assumes reinvestment of quarterly dividends, and therefore may not equal the sum of dividend and share price returns in the table.

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

**Economic Outlook**

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

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

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

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

**Impact of Foreign Currency Translation**

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

**T5** Impact of foreign currency translation

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

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

(1) Includes impact of all currencies.

(2) Includes the impact of foreign currency hedges.

## GROUP FINANCIAL PERFORMANCE

### Basis of Presentation

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

### Net Income

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

### Net Interest Income

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

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

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

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

### Outlook

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

#### T6 Net interest income and core banking margin<sup>(1)</sup>

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

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

T7 Average balance sheet<sup>(1)</sup> and net interest income

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

(1) Average of daily balances.

(2) Includes non-controlling interest of \$1.9 (2017 – \$1.6; 2016 – \$1.5).

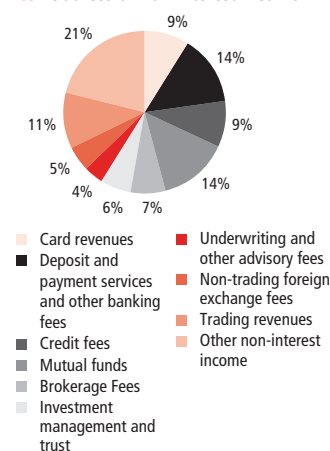
## Non-Interest Income

### T8 Non-interest income

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

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

C3 Sources of non-interest income



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

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

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

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

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

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

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

### Outlook

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

**T9** Trading revenues

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

**Provision for Credit Losses**

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

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

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

**Outlook**

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

**T10** Provision for credit losses by business line

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

MANAGEMENT'S DISCUSSION AND ANALYSIS

**T10A** Provisions against impaired loans by business line

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

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

**T11** Provision for credit losses as a percentage of average net loans and acceptances<sup>(1)(2)(3)</sup>

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

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

(2) Includes provision for credit losses on certain financial assets – loans, acceptances, and off-balance sheet exposures.

(3) 2018 includes Day 1 acquisition-related impact in International Banking.

**T12** Net write-offs<sup>(1)</sup> as a percentage of average loans and acceptances<sup>(2)(3)</sup>

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

(1) Write-offs net of recoveries.

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

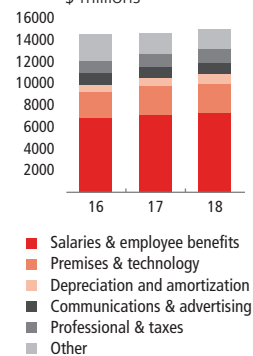
(3) Excludes loans acquired under the Federal Deposit Insurance Corporation (FDIC) guarantee related to the acquisition of R-G Premier Bank of Puerto Rico, prior to 2018.

## Non-Interest Expenses

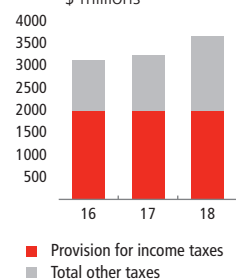
### T13 Non-interest expenses and productivity

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

C4 Non-interest expenses  
\$ millions



C5 Direct and indirect taxes  
\$ millions



## MANAGEMENT'S DISCUSSION AND ANALYSIS

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

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

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

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

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

### Outlook

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

### Income Taxes

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

### Outlook

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

## Financial Results Review: 2017 vs. 2016

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

### Net income

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

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

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

### Net interest income

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

### Non-interest income

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

### Provision for credit losses

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

### Non-interest expenses

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

### Income taxes

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

## T14 Financial Results Review

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

(1) Taxable equivalent basis. Refer to Glossary.

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

<sup>(1)</sup> Refer to Non-GAAP Measures.

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

(1) Taxable equivalent basis. Refer to Glossary.

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

## Fourth Quarter Review

### T15 Fourth quarter financial results

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

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

### T15A Fourth quarter financial results

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

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

## Transactions impacting results

### Acquisition-related costs:

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

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

### Net income

#### Q4 2018 vs Q4 2017

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

#### Q4 2018 vs Q3 2018

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

### Net interest income

#### Q4 2018 vs Q4 2017

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

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

**Q4 2018 vs Q3 2018**

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

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

**Non-interest income****Q4 2018 vs Q4 2017**

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

**Q4 2018 vs Q3 2018**

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

**Provision for credit losses****Q4 2018 vs Q4 2017**

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

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

**Q4 2018 vs Q3 2018**

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

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

**Non-interest expenses****Q4 2018 vs Q4 2017**

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

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

**Q4 2018 vs Q3 2018**

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

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

**Income taxes****Q4 2018 vs Q4 2017**

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

**Q4 2018 vs Q3 2018**

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

## Trending Analysis

### T16 Quarterly financial highlights

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

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

(2) Refer to page 18 for a discussion of non-GAAP measures.

#### Net income

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

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

#### Net interest income

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

#### Non-interest income

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

#### Provision for credit losses

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

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

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

#### Non-interest expenses

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

#### Income taxes

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

## BUSINESS LINE OVERVIEW

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

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

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

### CANADIAN BANKING

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

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

### INTERNATIONAL BANKING

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

### GLOBAL BANKING AND MARKETS

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

## KEY PERFORMANCE INDICATORS FOR ALL BUSINESS LINES

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

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

### T17 Financial performance

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

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

(2) Taxable equivalent basis. Refer to Glossary.

(3) Refer to Glossary.

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

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

(2) Taxable equivalent basis. Refer to Glossary.

(3) Refer to Glossary.

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

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

(2) Taxable equivalent basis. Refer to Glossary.

(3) Refer to Glossary.

## Canadian Banking

### 2018 Achievements

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

### Business Profile

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

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

### Strategy

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

### 2019 Priorities

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

**T18 Canadian Banking financial performance**

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

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

(2) Taxable equivalent basis (TEB).

(3) Includes net income from investments in associated corporations of \$93 (2017 – \$66; 2016 – \$78).

(4) Refer to Glossary.

(5) Net interest income (TEB) as % of average earning assets excluding bankers acceptances.

**T18A Adjusted Canadian Banking financial performance<sup>(1)</sup>**

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

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

## Financial Performance

### Net income

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

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

### Average assets and liabilities

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

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

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

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

### Revenues

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

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

### Retail & Small Business Banking

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

### Commercial Banking

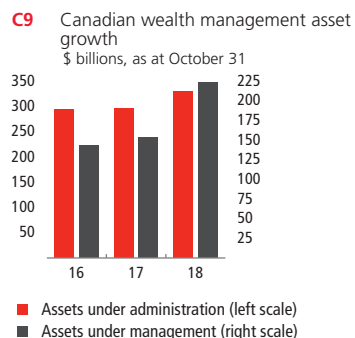
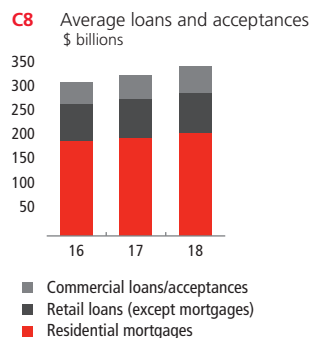
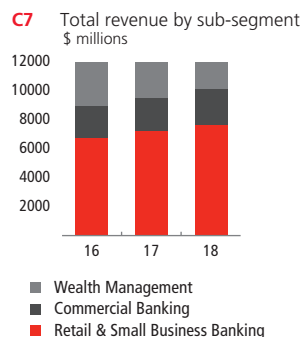
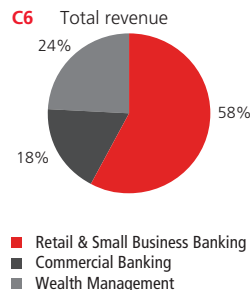
Total commercial banking revenues increased \$183 million or 8% to \$2,358 million. Net interest income rose \$183 million or 11% due mainly to growth in loans, business operating accounts and GICs, and an improvement in the margin. Non-interest income remained flat due to higher card and acceptance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

### Wealth Management

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

### Non-interest expenses

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



**Provision for credit losses**

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

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

**Provision for income taxes**

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

**Outlook**

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

# International Banking

## 2018 Achievements

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

## Business Profile

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

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

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

## Strategy

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

## 2019 Priorities

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

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

**T19 International Banking financial performance**

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

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

(2) Taxable equivalent basis.

(3) Includes net income from investments in associated corporations of \$643 (2017 – \$482; 2016 – \$473).

(4) Includes BBVA Chile third quarter 2018 before tax earnings of \$21. BBVA Chile fourth quarter earnings have been reflected in all P&L lines.

(5) Includes one additional month of earnings relating to Thanachart Bank of \$30 (after tax and NCI \$22), and Chile of \$36 (after tax and NCI \$26) for the year ended October 31, 2018.

(6) Includes Day 1 provision for credit losses on acquired performing loans of \$404 for the year ended October 31, 2018 (October 31, 2017 – nil).

(7) Refer to Glossary.

(8) Net interest income (TEB) as % of average earning assets excluding bankers acceptances.

(9) Provision for credit losses as a percentage of average net loans and acceptances adjusted for Day 1 PCL was 1.18% in 2018.

(10) Includes bankers' acceptances.

**T19A Adjusted International Banking financial performance<sup>(1)</sup>**

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

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

## Financial Performance

### Net income

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

### Financial Performance on Constant Dollar Basis

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

#### T20 International Banking financial performance on constant dollar basis

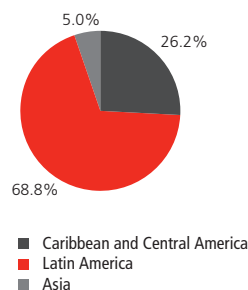
(\$ millions)	2018 <sup>(1)</sup>	2017	2016
Net interest income <sup>(2)</sup>	\$ 7,322	\$ 6,626	\$ 6,191
Non-interest income <sup>(2)/(3)</sup>	4,111	3,653	3,440
Total revenue <sup>(2)</sup>	11,433	10,279	9,631
Provision for credit losses	1,867	1,276	1,257
Non-interest expenses	6,111	5,594	5,388
Income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

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

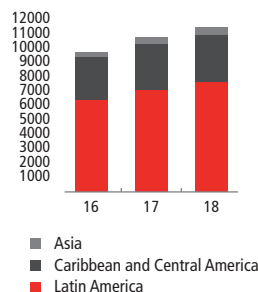
(2) Taxable equivalent basis.

(3) Includes net income from investments in associated corporations of \$643 (2017 – \$511; 2016 – \$498).

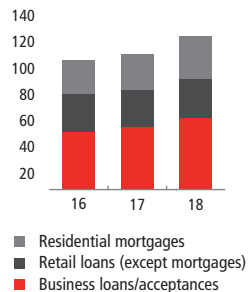
C10 Total revenue



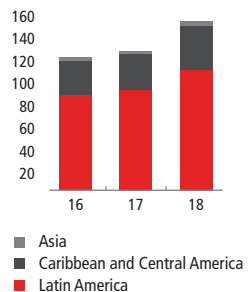
C11 Total revenue by region \$ millions



C12 Average loans and acceptances \$ billions



C13 Average earning assets<sup>(1)</sup> by region \$ billions



(1) Average earning assets excluding bankers acceptances

### Net income

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

### Average assets and liabilities

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

### Revenues

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

### Latin America

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

### Caribbean and Central America

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

### Asia

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

#### Non-interest expenses

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

#### Provision for credit losses

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

#### Provision for income taxes

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

#### Outlook

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

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

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

# Global Banking and Markets

## 2018 Achievements

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

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

## Deal Highlights

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

## Business Profile

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

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

## Strategy

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

## 2019 Priorities

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

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

**T21** Global Banking and Markets financial performance

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

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

(2) Taxable equivalent basis.

(3) Refer to Glossary.

(4) Business Banking only.

(5) Net interest income (TEB) as % of average earning assets excluding bankers' acceptances.

## Financial Performance

### Net income

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

### Average assets and liabilities

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

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

### Net interest income

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

### Non-interest income

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

### Non-interest expense

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

### Provision for credit losses

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

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

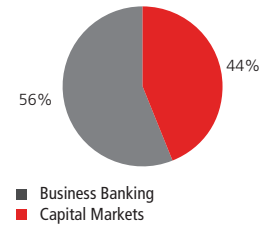
### Provision for income taxes

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

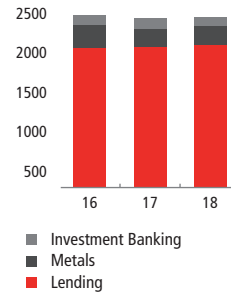
### Outlook

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

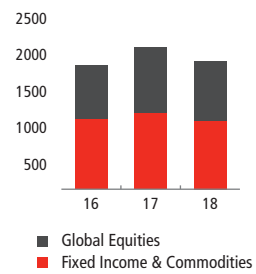
**C14** Total revenue



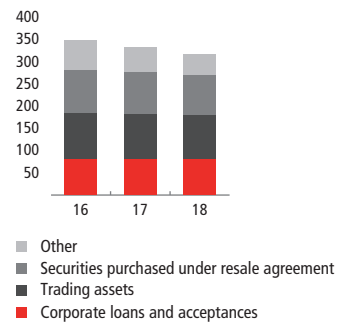
**C15** Business banking revenue \$ millions



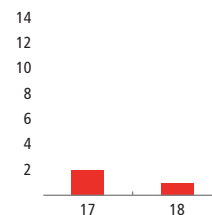
**C16** Capital markets revenue by business line \$ millions



**C17** Composition of average earning assets \$ billions



**C18** Trading day losses



## Other

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

### Financial Performance

#### T22 Other financial performance

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

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

(2) Includes the net residual in matched maturity transfer pricing and the elimination of the tax-exempt income gross-up reported in net interest income, non-interest income and provision for income taxes in the business segments.

(3) Includes net income from investments in associated corporations of \$(177) in 2018; (2017 – \$(141); 2016 – \$(137)).

#### Net income

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

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

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

#### Revenues

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

#### Non-interest expenses

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

## Financial Performance of Business Lines: 2017 vs. 2016

### Canadian Banking

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

### International Banking

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

### Global Banking and Markets

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

### Other

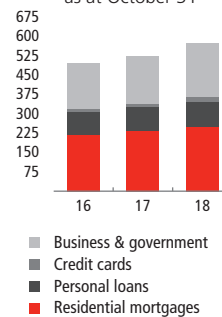
The Other segment had a net loss attributable to equity holders of \$267 million in 2017. Adjusting for the restructuring charge of \$378 million (\$278 million after tax), net income was \$9 million in 2016.

## GROUP FINANCIAL CONDITION

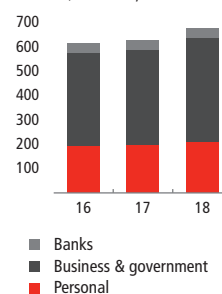
### T23 Condensed statement of financial position

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

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



C20 Deposits \$ billions, as at October 31



### Statement of Financial Position

#### Assets

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

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

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

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

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

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

## Liabilities

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

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

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

## Equity

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

## Outlook

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

## Capital Management

### Overview

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

### Governance and oversight

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

### Risk appetite

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

### Regulatory capital

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

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

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

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

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

### Regulatory capital developments during the year

#### Basel II standardized regulatory capital floor

Since the introduction of Basel II in 2008, OSFI has prescribed a minimum Basel I capital floor for institutions that use the advanced internal ratings-based approach for credit risk. The Basel I capital floor add-on is determined by comparing a capital requirement calculated by reference to Basel I against the Basel III calculation, as specified by OSFI. A shortfall in the Basel III capital requirement as compared with the Basel I floor is added to RWA. As noted in prior quarters, OSFI replaced the Basel I regulatory capital floor with a capital floor based on the Basel II standardized approach for credit risk, effective the second quarter of 2018. Revised capital floor requirements also include risk-weighted assets for market risk and CVA. Under this new Basel II regulatory capital floor requirement, the Bank does not have a capital floor add-on as at October 31, 2018.

#### Domestic Stability Buffer

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

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

#### Total Loss Absorbing Capacity (TLAC)

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

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

### Planning, managing and monitoring capital

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

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

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

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

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

### Capital generation

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

### Capital deployment

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

### Regulatory capital ratios

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

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

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

### Outlook

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

**T24** Regulatory capital<sup>(1)</sup>

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

(1) Regulatory capital ratios are determined in accordance with Basel III rules on an all-in basis.

(2) Reported amounts are based on OSFI's requirements that goodwill relating to investments in associates be classified as goodwill for regulatory reporting purposes.

(3) Other CET1 capital deductions under Basel III all-in include gains/losses due to changes in own credit risk on fair valued liabilities, pension plan assets and other items.

(4) Non-qualifying Tier 1 and Tier 2 capital instruments are subject to a phase-out period of 10 years.

(5) Other Tier 1 capital adjustments under the all-in approach include eligible non-controlling interests in subsidiaries.

(6) Collective allowances for 2017 and 2016.

(7) Since the introduction of Basel II in 2008, OSFI has prescribed a minimum capital floor for institutions that use the advanced internal ratings-based approach for credit risk. The Basel I capital floor add-on is determined by comparing a capital requirement calculated by reference to Basel I against the Basel III calculation, as specified by OSFI. A shortfall in the Basel III capital requirement as compared with the Basel I floor is added to RWA. OSFI replaced the Basel I regulatory capital floor with a capital floor based on the Basel II standardized approach for credit risk, effective April 30, 2018. Revised capital floor requirements also include risk-weighted assets for market risk and CVA. Under this new Basel II regulatory capital floor requirement, the Bank does not have a capital floor add-on as at October 31, 2018 (Basel I floor add-on: October 31, 2017 - \$12.8 billion, October 31, 2016 - nil).

(8) As at October 31, 2018, CVA risk-weighted assets were calculated using scalars of 0.80, 0.83, and 0.86 to compute CET1, Tier 1 and Total capital ratios, respectively, (scalars of 0.72, 0.77, and 0.81 in 2017).

(9) OSFI designated the Bank as a domestic systemically important bank (D-SIB), increasing its minimum capital ratio requirements by 1% for the identified D-SIBs. This 1% surcharge was applicable to all minimum capital ratio requirements for CET1, Tier 1 and Total Capital, by January 1, 2016, in line with the requirements for global systemically important banks.

**T25** Changes in regulatory capital<sup>(1)</sup>

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

(1) Regulatory capital ratios are determined in accordance with Basel III rules on an all-in basis.

(2) Reported amounts are based on OSFI's requirements that goodwill relating to investments in associates be classified as goodwill for regulatory reporting purposes.

(3) Represents the full transitional impact on retained earnings from the Bank's adoption of IFRS 9 (Financial Instruments) on November 1, 2017.

(4) Collective allowances for 2017 and 2016.

### Regulatory capital components

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

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

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

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

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

Partly offset by:

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

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

### Dividends

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

### T26 Selected capital management activity

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

(1) Represents primarily cash received for stock options exercised during the year, common shares issued in connection with acquisitions, and common shares issued pursuant to the Dividend and Share Purchase Plan.

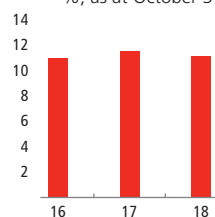
(2) Represents reduction to Common shares and Retained earnings (refer to the Consolidated Statement of Changes in Equity).

### Common shares issued

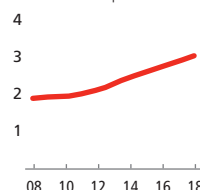
On May 1, 2018, the Bank issued 11,133,141 common shares at a price of \$78.86 per common share in connection with the acquisition of Jarislowsky Fraser. As a result of the issuance, the Bank recorded an increase to equity – common shares of \$878 million. Refer to Note 24 in the consolidated financial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

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

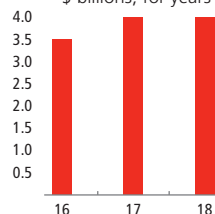
C21 CET1 capital % , as at October 31



C22 Dividend growth dollars per share



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



### Normal Course Issuer Bid

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

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

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

Share data and other capital instruments

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

T27 Shares and other instruments

As at October 31, 2018	Amount (\$ millions)	Dividends declared per share <sup>(1)</sup>	Number outstanding (000s)	Conversion features
<b>Common shares<sup>(2)</sup></b>	\$ 18,234	\$ 3.28	1,227,028	n/a
<b>Preferred shares</b>				
Preferred shares Series 18 <sup>(3)</sup>	–	0.418750	–	–
Preferred shares Series 19 <sup>(3)</sup>	–	0.374547	–	–
Preferred shares Series 20 <sup>(4)</sup>	–	0.902500	–	–
Preferred shares Series 21 <sup>(4)</sup>	–	0.691967	–	–
Preferred shares Series 22 <sup>(5)(6)</sup>	234	0.957500	9,377	Series 23
Preferred shares Series 23 <sup>(5)(7)</sup>	66	0.736967	2,623	Series 22
Preferred shares Series 30 <sup>(5)(8)</sup>	154	0.455000	6,143	Series 31
Preferred shares Series 31 <sup>(5)(9)</sup>	111	0.516968	4,457	Series 30
Preferred shares Series 32 <sup>(5)(10)</sup>	279	0.515752	11,162	Series 33
Preferred shares Series 33 <sup>(5)(11)</sup>	130	0.601968	5,184	Series 32
Preferred shares Series 34 <sup>(5)(12)(13)</sup>	350	1.375000	14,000	Series 35
Preferred shares Series 36 <sup>(5)(12)(14)</sup>	500	1.375000	20,000	Series 37
Preferred shares Series 38 <sup>(5)(12)(15)</sup>	500	1.212500	20,000	Series 39
Preferred shares Series 40 <sup>(5)(12)(16)</sup>	300	–	12,000	Series 41
<b>Additional Tier 1 securities</b>				
Scotiabank Trust Securities – Series 2006-1 issued by Scotiabank Capital Trust <sup>(18a,c,d)</sup>	\$ 750	28.25	5,650	750
Scotiabank Tier 1 Securities – Series 2009-1 issued by Scotiabank Tier 1 Trust <sup>(18b,c,d)</sup>	650	39.01	7,802	650
Subordinated additional Tier 1 capital securities (NVCC)	US\$ 1,250	US\$ 23.25	4,650	1,250
<b>NVCC subordinated debentures</b>				
Subordinated debentures due March 2027			\$ 1,250	2.58
Subordinated debentures due December 2025			750	3.37
Subordinated debentures due December 2025			US\$ 1,250	4.50
<b>Options</b>				
Outstanding options granted under the Stock Option Plans to purchase common shares <sup>(2)(19)</sup>				Number outstanding (000s) 14,140

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

## Credit ratings

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

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

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

## Risk-weighted assets

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

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

## CET1 Credit risk-weighted assets

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

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

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

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

(1) Includes counterparty credit risk.

(2) Book size is defined as organic changes in book size and composition (including new business and maturing loans).

(3) Book quality is defined as quality of book changes caused by experience such as underlying customer behaviour or demographics, including changes through model calibrations/realignments.

(4) Model updates are defined as model implementation, change in model scope or any change to address model enhancement.

(5) Methodology and policy is defined as methodology changes to the calculations driven by regulatory policy changes, such as new regulation (e.g. Basel III).

(6) As at October 31, 2018, risk-weighted assets were calculated using scalars of 0.80, 0.83, and 0.86 to compute CET1, Tier 1, and Total capital ratios, respectively, (scalars were 0.72, 0.77, and 0.81 in 2017).

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

**T29** Internal rating scale<sup>(1)</sup> and mapping to external rating agencies

Equivalent Rating

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

(1) Applies to non-retail portfolio.

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

**T30** Non-retail AIRB portfolio exposure by internal rating grade<sup>(1)</sup>

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

(1) Excludes securitization exposures.

(2) Excludes government guaranteed residential mortgages of \$82.2 billion (\$91.7 billion in 2017).

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

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

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

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

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

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

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

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

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

(1) Estimated parameters are based on portfolio averages at Q3/17, whereas actual parameters are based on averages of realized parameters during the subsequent four quarters.

(2) EAD back-testing is performed through Credit Conversion Factor (CCF) back-testing, as EAD is computed using the sum of the drawn exposure and undrawn exposure multiplied by the estimated CCF.

#### Credit risk-weighted assets – Canadian retail

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

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

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

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

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

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

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

**T32** Retail AIRB portfolio exposure by PD range<sup>(1)</sup>

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

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

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

**T33** Estimated and actual loss parameters<sup>(1)</sup>

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

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

**Credit risk-weighted assets – International retail**

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

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

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

**Market risk**

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

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

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

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

### T34 Total market risk capital

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

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

### T35 Risk-weighted assets movement by key drivers

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

(1) Movement in risk levels are defined as changes in risk due to position changes and market movements. Foreign exchange movements are embedded within Movement in risk levels.

(2) Model updates are defined as updates to the model to reflect recent experience, change in model scope.

(3) Methodology and policy is defined as methodology changes to the calculations driven by regulatory policy changes (eg. Basel III).

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

### Operational risk

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

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

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

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

### Internal capital

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

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

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

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

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

### Off-Balance Sheet Arrangements

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

### Structured entities

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

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

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

### Consolidated structured entities

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

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

### Unconsolidated structured entities

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

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

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

#### Canadian multi-seller conduits administered by the Bank

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

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

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

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

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

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

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

(1) Funded assets are reflected at original cost, which approximates estimated fair value.

(2) Exposure to the Bank is through global-style liquidity facilities.

(3) These assets are substantially sourced from Canada.

### Structured finance entities

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

### Other unconsolidated structured entities

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

### Securitizations

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

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

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

### Guarantees and other commitments

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

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

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

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

## Financial Instruments

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## Selected Credit Instruments – Publicly Known Risk Items

### Mortgage-backed securities

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

#### T37 Mortgage-backed securities

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

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

### Collateralized debt obligations

#### Trading portfolio

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

#### Other

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

# RISK MANAGEMENT

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

## Risk Management Framework

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

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



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

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

## Risk Management Principles

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

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

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

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

**Shared Accountability** – every employee is responsible for managing risk.

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

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

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

## Risk Governance

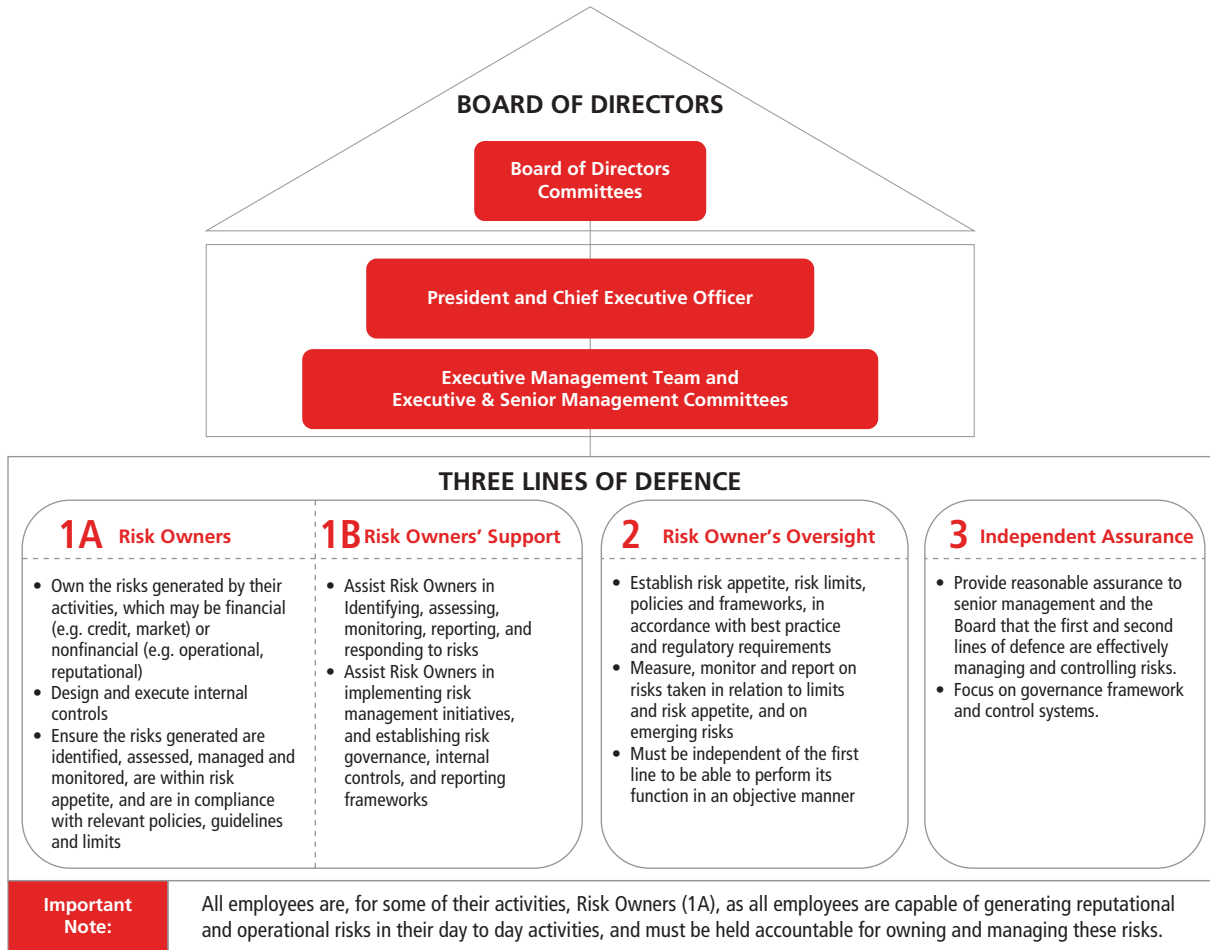
Effective risk management begins with effective risk governance.

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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

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

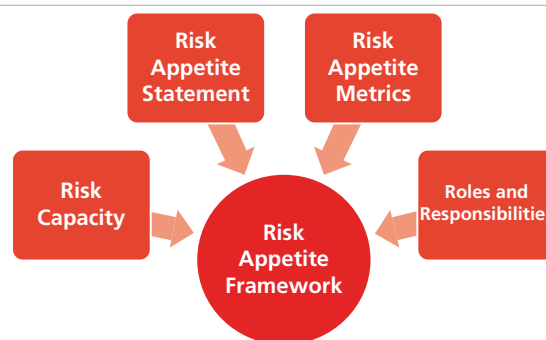
**Business Line and Corporate Functions:** as the first line of defence in the Three Lines of Defence model, are accountable for effective management of the risks within their business lines and functions through identifying, assessing, mitigating, monitoring and reporting the risks. Business lines and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

## Risk Appetite

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

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

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



### Risk Appetite Statement

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

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

### Risk Appetite Metrics

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

Other components of Scotiabank's risk appetite metrics:

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

## Risk Management Tools

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

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

### Policies, Frameworks & Limits

#### Policies and Frameworks

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

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

#### Limits

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

### Risk Measurement

#### Models

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

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

### Monitoring and Reporting

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

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

### Forward-Looking Exercises

#### Stress Testing

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

### Other Testing

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

### Risk Identification and Assessment

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

#### Principal Risk Types

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

##### Financial Risks:

###### *Credit, Market, Liquidity, Insurance*

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

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

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

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

#### Assessment of Risks

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

#### Top and Emerging Risks

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

#### Other Considerations

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

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

## Risk Culture

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

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

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

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

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

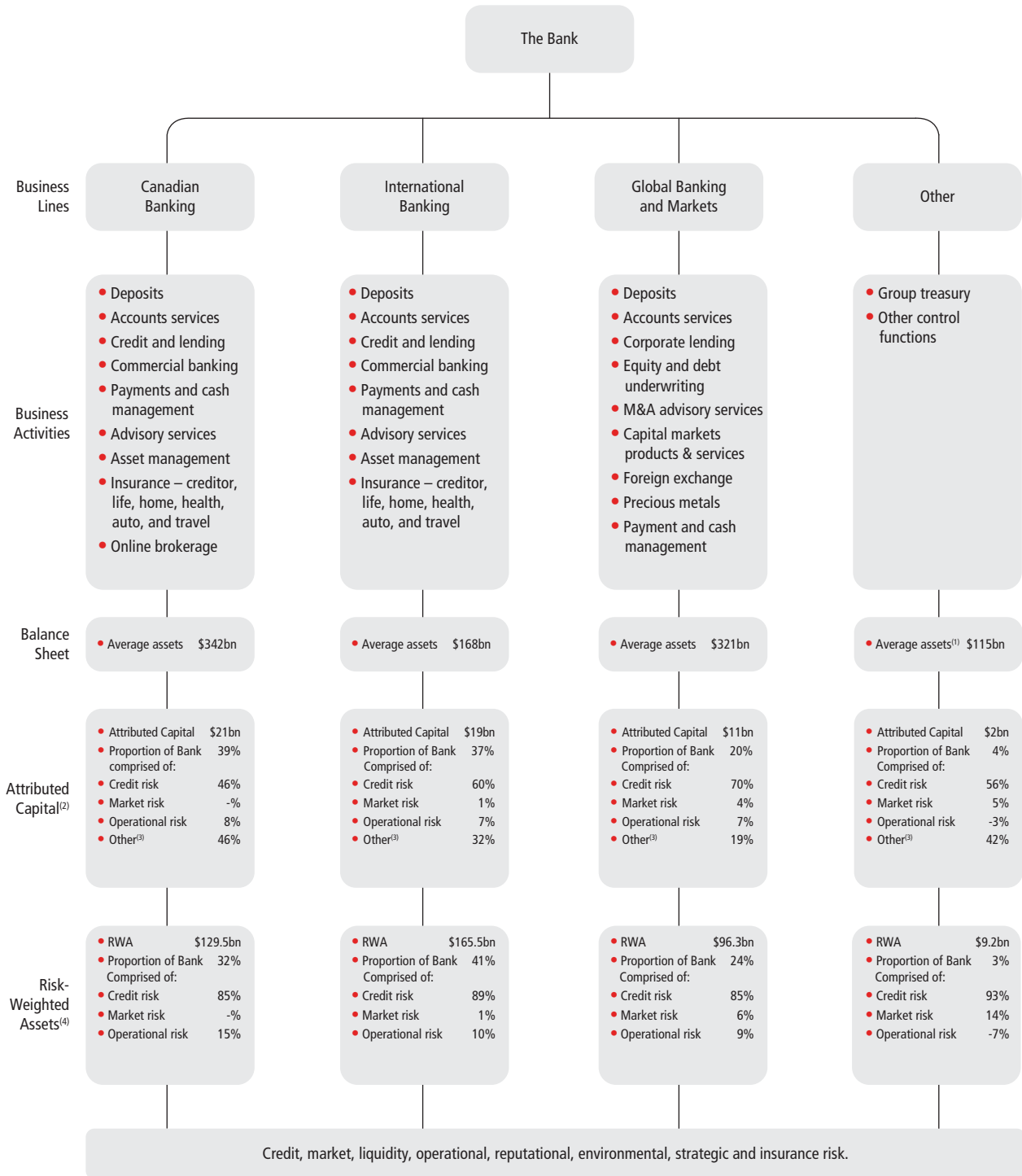
- **Code of Conduct:** describes the minimum standards of behaviour to which all directors, officers, and employees must adhere and attest to on an annual basis.
- **Values:** Integrity – Act With Honour; Respect – Value Every Voice; Accountability – Make It Happen; Passion – Be Your Best.
- **Communication:**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



**Principal Risk Types**

<b>Risk Type</b>	<b>Key Governing Documentation</b>	<b>Ways that they support Risk Appetite</b>
Credit Risk	<ul style="list-style-type: none"> <li>• Credit Risk Policy</li> <li>• Credit Risk Appetite</li> <li>• Residential Mortgage Underwriting Policy</li> </ul>	Quantitative limits, such as: Credit Risk Appetite limits at the all-Bank level and Business Line level; Exposure to a single counterparty or group of related parties; Country risk; and Industry concentrations.
Market Risk	<ul style="list-style-type: none"> <li>• Market and Structural Risk Management Policy</li> </ul>	Quantitative limits, such as: Value at Risk (VaR); Stress test results; Debt investment exposures; and Structural interest rate and foreign exchange exposures.
Liquidity Risk	<ul style="list-style-type: none"> <li>• Liquidity Risk and Collateral Management Policy</li> </ul>	Quantitative limits, such as: Liquidity Coverage Ratio (LCR); Minimum amounts of high quality liquid assets that can be readily sold or pledged to provide contingent liquidity; Limits to control the maximum net cash outflow over a specified horizon; and minimize concentration through diversification of funding source.
Insurance Risk	<ul style="list-style-type: none"> <li>• Insurance Risk Policy</li> <li>• Insurance Risk Management Framework</li> </ul>	Where insurance risks are taken, it is on a selective basis to achieve stable and sustainable earnings; and the risk assumed is diversified geographically and by product. Quantitative limits, such as Insurance Earnings at Risk metrics are included in the Bank's Risk Appetite Statement.
Operational Risk	<ul style="list-style-type: none"> <li>• Operational Risk Management Policy and Framework</li> <li>• Internal Control Policy</li> <li>• New Initiative Risk Management Policy</li> <li>• Global Third Party Risk Management Policy</li> <li>• Financial Crisis Management Planning policies &amp; framework</li> </ul>	Operational risk appetite expresses how much residual risk the Bank is willing to tolerate and is expressed quantitatively by an aggregate loss event limit, a single event loss limit, and a variety of limits for individual categories of operational risk.
Information Technology & Cybersecurity Risk	<ul style="list-style-type: none"> <li>• IT Risk Management Policy and Framework</li> <li>• Information Security Policy and Governance Framework</li> </ul>	The Bank has established minimum expectations and requirements for the systematic identification, measurement, mitigation and monitoring of IT and Cybersecurity risk, including requirements for the protection of information throughout its lifecycle.
Data Risk	<ul style="list-style-type: none"> <li>• Data Management Policy</li> <li>• Data Governance Framework</li> </ul>	The Bank has established appropriate minimum expectations to implement data management and governance through data quality business rules and dimensions in support of the Bank's risk appetite enabling the Bank to measure the level of data quality on its critical data elements.
Compliance Risk	<ul style="list-style-type: none"> <li>• Compliance Policy</li> <li>• Code of Conduct</li> </ul>	Compliance Risk appetite is based on the moderate all-Bank Residual Compliance Risk Rating obtained through the annual Compliance Risk & Control Assessment.
Money Laundering & Terrorist Financing (ML/TF) Risk	<ul style="list-style-type: none"> <li>• AML/ATF and Sanctions Policy</li> <li>• AML/ATF and Sanctions Handbook</li> </ul>	The Bank has no appetite for entering into relationships with businesses or individuals engaged in illegal activities, or with businesses engaged in improper, quasi-legal, or inappropriate activities.
Reputational Risk	<ul style="list-style-type: none"> <li>• Reputational Risk Policy</li> </ul>	Low appetite for reputational, legal, or taxation risk arising in business activities, initiatives, products, services, transactions or processes, or from a lack of suitability of products for clients.
Environmental Risk	<ul style="list-style-type: none"> <li>• Environmental Policy</li> </ul>	The Bank has policies and procedures in place to ensure that it provides loans to borrowers that demonstrate an ability and willingness to practice sound environmental risk management.
Strategic Risk	<ul style="list-style-type: none"> <li>• Annual Strategy Report to the Board of Directors</li> </ul>	Strategy report considers linkages between the Bank's Enterprise Risk Appetite Framework with the enterprise strategy, business line strategies and corporate function strategies.

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



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

### Top and emerging risks

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

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

#### Geopolitical risk

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

#### Legal and regulatory compliance risk

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

#### Anti-money laundering

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

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

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

#### Technology, information and cyber security risk

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

#### Technology innovation and disruption

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

#### Third party service providers

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

### Canadian household indebtedness

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

**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.

**Index of all credit risk disclosures**

	Page	Tables and charts	Page
Credit risk summary	83		
Credit Risk Management Framework			
Risk measures	83		
Corporate and commercial	83		
Risk ratings	83		
Adjudication	84		
Credit Risk Mitigation-Collateral/Security	84		
Traditional Non-Retail Products	84		
Commercial/Corporate Real Estate	84		
Traded products	85		
Credit Risk Mitigation-Collateral/Security	85		
Retail	85		
Adjudication	85		
Risk ratings	85		
Credit Risk Mitigation-Collateral/Security	86		
Credit Quality	86	T3 Financial highlights	23
Impaired loans	86	T11 Provision for credit losses as a percentage of average loans and acceptances	30
Allowance for credit losses	87	T12 Net charge-offs as a percentage of average loans and acceptances	30
		T60 Gross impaired loans by geographic segment	121
		T61 Provision against impaired loans by geographic segment	121
		T62 Cross-border exposure to select countries	121
		T63 Loans and acceptances by type of borrower	122
		T64 Off-balance sheet credit instruments	122
		T65 Changes in net impaired loans	123
		T66 Provision for credit losses	123
		T67 Provision for credit losses against impaired loans by type of borrower	124
		T68 Impaired loans by type of borrower	124
		T69 Total credit risk exposures by geography	125
		T70 AIRB credit risk exposures by maturity	125
		T71 Total credit risk exposures and risk-weighted assets	126
		Analysis of the aggregate credit risk exposure including market risk exposure, assets of the Bank's insurance subsidiaries and other assets that fully reconciles to the balance sheet (refer Note 37 – Financial instruments – risk management in the consolidated financial statements)	228
Portfolio review	87		
Risk diversification	87	C24 Well diversified in Canada and internationally – loans and acceptances	89
		C25 and in household and business lending – loans and acceptances	89
		T59 Loans and acceptances by geography	120
Risk mitigation	87		
Real estate secured lending	88	T43 Bank's exposure distribution by country	90
Loans to Canadian condominium developers	90		
European exposures	90		
Financial instruments	70	T37 Mortgage-backed securities	71

## Credit risk summary

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

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

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

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

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

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

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

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

## Risk measures

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

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

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

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

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

## Corporate and commercial

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

## Risk ratings

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

IG ratings are also used to define credit adjudication authority levels appropriate to the size and risk of each credit application. Lower-rated credits require increasingly more senior management involvement depending upon the aggregate exposure. Where the decision is beyond their authority levels, credit units will refer the request – with its recommendation – to a senior credit committee for adjudication. In certain cases, these must be referred to the Risk Committee of the Board of Directors.

#### *Adjudication*

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

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

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

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

Other forms of credit risk mitigation include third party guarantees and, in the case of derivatives facilities, master netting agreements.

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

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

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

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

#### *Credit Risk Mitigation – Collateral/Security*

Traditional Non-Retail Products (e.g. Operating lines of Credit, Term Loans)

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

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

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

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

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

#### *Commercial/Corporate Real Estate*

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

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

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

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

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

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

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

### Traded products

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

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

#### *Credit risk mitigation – collateral/security*

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

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

### Retail

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

#### *Adjudication*

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

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

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

#### *Risk ratings*

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

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

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

*Credit risk mitigation – collateral/security*

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

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

**Credit quality**

**T39** Impaired loans by business line<sup>(1)</sup>

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

Impaired loan metrics

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

(1) Excludes loans acquired under the Federal Deposit Insurance Corporation (FDIC) guarantee related to the acquisition of R-G Premier Bank of Puerto Rico, prior to 2018.

(2) A portion of the existing allowance for credit losses on impaired loans as at October 31, 2017 was reclassified to performing loans with the adoption of IFRS 9 effective November 1, 2017, to conform with current period presentation.

**Impaired loans**

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

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

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

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

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

#### Allowance for credit losses

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

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

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

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

Allowance for credit losses on performing loans have increased to \$3,388 million compared to \$1,446 million as at Oct 31, 2017 due primarily to the impact of the implementation of IFRS 9 and impact of Day 1 provision for credit losses on acquired performing loans.

#### Portfolio review

##### Canadian Banking

Gross impaired loans in the retail portfolio decreased by \$42 million or 5%. Total provision for credit losses in the retail portfolio was \$746 million, down \$111 million or 15% from last year.

In the commercial loan portfolio, gross impaired loans decreased by \$16 million to \$158 million. The provision for credit losses was \$48 million, down \$8 million or 14% from last year.

##### International Banking

In retail, gross impaired loans decreased by \$147 million to \$2,026 million, with a decrease attributable mainly due to the impact of the implementation of IFRS 9, which was partially offset by increases due to acquisitions. The total provision for credit losses in the retail portfolio increased to \$1,667 million from \$1,090 million last year, primarily due to one-time provisions related to acquisitions and the impact of acquisition related benefits in the prior year.

In commercial banking, gross impaired loans were \$1,823 million, an increase of \$559 million over the prior year, due primarily to the impact of the implementation of IFRS 9, and purchased credit-impaired loans resulting from acquisitions. The total provision for credit losses in the commercial portfolio was \$200 million compared with \$204 million last year, down \$4 million or 2%.

##### Global Banking and Markets

Gross impaired loans in Global Banking and Markets decreased by \$89 million to \$283 million, due primarily to resolutions during the year partially offset by the impact of the implementation of IFRS 9. The total provision for credit losses was a net reversal of \$50 million compared with \$42 million last year.

##### Risk diversification

The Bank's exposure to various countries and types of borrowers are well diversified (see T59 and T63). Chart C24 shows loans and acceptances by geography. Ontario represents the largest Canadian exposure at 32% of the total. Latin America was 20% of the total exposure and the U.S. was 7%.

Chart C25 shows loans and acceptances by type of borrower (see T63). Excluding loans to households, the largest industry exposures were real estate and construction (5.1%), financial services (5.1% including banks and non-banks), wholesale and retail (4.4%), and energy (2.6%).

##### Risk mitigation

To mitigate exposures in its performing corporate portfolios, the Bank uses diversification by company, industry, and country, with loan sales and credit derivatives used sparingly. In 2018, loan sales totaled \$25 million, compared to \$242 million in 2017. The largest volume of loan sales in 2018 related to loans in the metals industry. As at October 31, 2018, credit derivatives used to mitigate exposures in the portfolios totaled \$13 million (notional amount), compared to \$23 million as at October 31, 2017.

The Bank actively monitors industry and country concentrations. As is the case with all industry exposures, the Bank continues to closely follow developing trends and takes additional steps to mitigate risk as warranted. Energy, mining, and shipping portfolios are being closely managed.

##### Overview of loan portfolio

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

##### Climate Change Risks

In February 2018, Scotiabank announced its support of the Financial Stability Board (FSB) Task Force on Climate-related Financial Disclosures (TCFD). This particular disclosure relates to the Bank's non-retail loan book. Additional disclosures relating to the non-retail loan book as well as other aspects of the Bank's operations will be included in the 2018 Corporate Social Responsibility Report.

#### Governance

##### Board Oversight

Climate Change risk and related disclosure is reviewed and discussed at several committees within the Board, including the Risk Committee and Audit and Conduct Review Committee, as well as by the full Board of Directors.

The Risk Committee, however, retains primary oversight responsibility for climate change related risks and opportunities with respect to the Bank's loan portfolio. As part of this responsibility, in 2018 the Risk Committee reviewed a Future of Energy report as part of its industry analyses and review of climate change risks. The Risk Committee advises the Board on key and emerging risks and related policies (e.g., Environmental Policy and Credit Risk Appetite) and reviews the Bank's management of key risks such as climate change. Reporting on such risks and opportunities is provided to

the Risk Committee via the Emerging Risks section of the quarterly Enterprise Risk Management Report (when appropriate), as well as review and approval of industry reports and individual credit submissions. Any significant climate-related natural disasters affecting the Bank's loan book would also be discussed at Risk Committee.

The Corporate Governance Committee is also engaged, as it acts in an advisory capacity to the Board through a continuing assessment of the Bank's approach to corporate governance and makes policy recommendations. Amongst its responsibilities, this Committee reviews the Bank's corporate social responsibility strategy and reporting. This includes climate change, as one of the Bank's corporate social responsibility priorities.

#### *Management's Role*

The Bank's existing Environmental Policy and Credit Risk Policy are the two main policy tools for identifying and managing climate related risks associated with the Bank's non-retail lending portfolio. These risks are identified, assessed and managed through the Bank's credit risk and environmental risk due diligence and adjudication processes. In 2018, the Bank continued its work on enhancing its climate change due diligence as part of the overall environmental risk due diligence process.

Specific and emerging risks and issues are raised to the relevant levels of management and/or risk committees for discussion or resolution and when deemed appropriate are reported quarterly in the Emerging Risk section of the Enterprise Risk Management Report to the Risk Committee of the Board.

The day-to-day responsibility for managing and reporting on climate change risk rests within Global Risk Management and its dedicated Environmental and Social Risk (ESR) team. The ESR team has responsibility for the integration of climate change considerations into individual credit applications and industry reviews, through the development and implementation of climate-related risk policies, procedures, tools and the provision of training to banking officers and credit adjudicators. The team also assists with the review of transactions to ensure climate-related risks are appropriately identified, considered and mitigated.

#### **Strategy**

Full integration of climate change considerations into Bank-wide processes will be a multi-year journey, with some aspects taking longer than others. In 2018, work began to develop a deeper understanding of climate-related risks by enhancing the Bank's due diligence processes and integrating climate risk considerations into its industry reviews. With respect to the former, enhanced due diligence processes will lead to application of a climate change risk-rating on individual accounts, followed by application of climate change scenario analyses.

#### **Risk Management**

The Bank considers environmental risk (including climate-related risks) as a principal risk type. Climate-related risk refers to the possibility that climate change issues associated with Scotiabank or its customers could give rise to credit, reputational, operational or legal risk, and ultimately affect Bank performance.

For over a decade, the Bank has utilized and refined a comprehensive environmental risk due diligence process. It is using its existing expertise in environmental risk management to build strong climate change risk due diligence processes that are repeatable, systematic and specific. The Bank is working to build the processes and the controls to generate meaningful and practical outcomes, and develop metrics that will allow the Bank to identify, manage and report climate change related risks.

During 2018 the Bank undertook a significant amount of work related to climate risk in the loan book. Highlights include:

- a) The existing environmental risk framework and tools were expanded to better identify climate related risks (both physical and transition risks) for non-retail lending.
- b) A module on climate change risk was incorporated into the mandatory environmental risk training course for all non-retail banking officers and credit adjudicators.
- c) Policies and procedures for non-retail lending have been updated to include climate related due diligence questions. When relevant, climate change risks are to be addressed in all new and annual review credit applications.
- d) A detailed climate change risks and opportunities section was added to industry reviews for 28 economic sectors.
- e) Work has been initiated to use global positioning systems to better understand and assess the climate-related physical risks that may be incurred by the Bank's clients based upon their geographic location.

#### **Metrics and Targets**

Enhanced due diligence standards will allow the Bank to identify meaningful risk metrics. To that end, the Bank has engaged with a number of its non-retail clients to better understand their climate related risks; how they are being identified, mitigated, and reported; and the types of data that will be available.

The Bank is also working with its Canadian peers to develop common industry standards for risk metrics, which will facilitate future disclosures.

Once these risk metrics have been implemented, opportunities will exist to set meaningful targets.

#### **Real estate secured lending**

A large portion of the Bank's lending portfolio is comprised of residential mortgages and consumer loans, which are well diversified by borrower. As at October 31, 2018, these loans accounted for \$366 billion or 64% of the Bank's total loans and acceptances outstanding (October 31, 2017 – \$340 billion or 65%). Of these, \$274 billion or 75% are real estate secured loans (October 31, 2017 – \$257 billion or 76%). The tables below provide more details by portfolios.

**Insured and uninsured residential mortgages and home equity lines of credit**

The following table presents amounts of insured and uninsured residential mortgages and home equity lines of credit (HELOCs), by geographic area.

**T40** Insured and uninsured residential mortgages and home equity lines of credit (HELOCs), by geographic areas

As at October 31 (\$ millions)	2018											
	Residential mortgages						Home equity lines of credit					
	Insured <sup>(1)</sup>		Uninsured		Total		Insured <sup>(1)</sup>		Uninsured		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Canada: <sup>(2)</sup>												
Atlantic provinces	\$ 6,060	2.8	\$ 5,309	2.5	\$ 11,369	5.3	\$ -	-	\$ 1,175	5.6	\$ 1,175	5.6
Quebec	7,658	3.6	8,223	3.9	15,881	7.5	-	-	984	4.7	984	4.7
Ontario	41,351	19.4	65,660	30.8	107,011	50.2	-	-	11,086	53.0	11,086	53.0
Manitoba & Saskatchewan	5,473	2.6	3,992	1.9	9,465	4.5	1	-	795	3.8	796	3.8
Alberta	18,117	8.5	12,638	5.9	30,755	14.4	1	-	3,020	14.4	3,021	14.4
British Columbia & Territories	13,526	6.4	25,076	11.7	38,602	18.1	-	-	3,866	18.5	3,866	18.5
Canada <sup>(3)</sup>	\$ 92,185	43.3%	\$120,898	56.7%	\$213,083	100%	\$ 2	-%	\$20,926	100%	\$20,928	100%
International	-	-	40,274	100	40,274	100	-	-	-	-	-	-
<b>Total</b>	<b>\$ 92,185</b>	<b>36.4%</b>	<b>\$161,172</b>	<b>63.6%</b>	<b>\$253,357</b>	<b>100%</b>	<b>\$ 2</b>	<b>-%</b>	<b>\$20,926</b>	<b>100%</b>	<b>\$20,928</b>	<b>100%</b>
	2017											
Canada <sup>(3)</sup>	\$100,921	49.0%	\$104,872	51.0%	\$205,793	100%	\$ 4	-%	\$20,148	100%	\$20,152	100%
International	-	-	31,123	100	31,123	-	-	-	-	-	-	-
<b>Total</b>	<b>\$100,921</b>	<b>42.6%</b>	<b>\$135,995</b>	<b>57.4%</b>	<b>\$236,916</b>	<b>100%</b>	<b>\$ 4</b>	<b>-%</b>	<b>\$20,148</b>	<b>100%</b>	<b>\$20,152</b>	<b>100%</b>

(1) Default insurance is contractual coverage for the life of eligible facilities whereby the Bank's exposure to real estate secured lending is protected against potential shortfalls caused by borrower default. This insurance is provided by either government-backed entities or private mortgage insurers.  
 (2) The province represents the location of the property in Canada.  
 (3) Includes multi-residential dwellings (4+ units) of \$2,899 (October 31, 2017 – \$2,594) of which \$2,029 are insured (October 31, 2017 – \$1,689).

**Amortization period ranges for residential mortgages**

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

**T41** Distribution of residential mortgages by remaining amortization periods, and by geographic areas

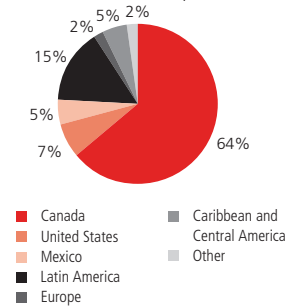
As at October 31	2018					
	Residential mortgages by remaining amortization periods					
	Less than 20 years	20-24 years	25-29 years	30-34 years	35 years and greater	Total residential mortgage
Canada	33.9%	38.0%	27.1%	0.9%	0.1%	100%
International	65.1%	18.9%	13.2%	2.7%	0.1%	100%
	2017					
Canada	33.8%	37.9%	26.9%	1.3%	0.1%	100%
International	69.3%	17.2%	11.1%	2.3%	0.1%	100%

**Loan to value ratios**

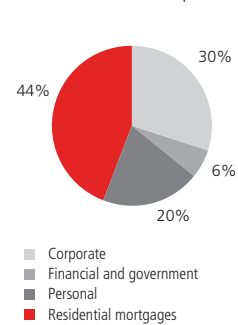
The Canadian residential mortgage portfolio is 57% uninsured (October 31, 2017 – 51%). The average loan-to-value (LTV) ratio of the uninsured portfolio is 54% (October 31, 2017 – 51%).

The following table presents the weighted average LTV ratio for total newly originated uninsured residential mortgages and home equity lines of credit during the year, which include mortgages for purchases, refinances with a request for additional funds and transfers from other financial institutions, by geographic areas.

**C24** Well diversified in Canada and internationally... loans and acceptances, October 2018



**C25** ... and in household and business lending loans and acceptances, October 2018



**T42** Loan to value ratios

	Uninsured LTV ratios <sup>(1)</sup>	
	For the year ended October 31, 2018	
	Residential mortgages LTV%	Home equity lines of credit <sup>(2)</sup> LTV%
Canada:		
Atlantic provinces	69.4%	57.3%
Quebec	65.4	67.5
Ontario	63.4	61.4
Manitoba & Saskatchewan	68.6	61.0
Alberta	67.3	70.5
British Columbia & Territories	61.6	59.9
Canada	63.8%	62.0%
International	68.9%	n/a
	For the year ended October 31, 2017	
Canada	64.0%	62.7%
International	70.4%	n/a

(1) The province represents the location of the property in Canada.

(2) Includes only home equity lines of credit (HELOC) under Scotia Total Equity Plan. LTV is calculated based on the sum of residential mortgages and the authorized limit for related HELOCs, divided by the value of the related residential property, and presented on a weighted average basis for newly originated mortgages and HELOCs.

*Potential impact on residential mortgages and real estate home equity lines of credit in the event of an economic downturn*

The Bank stresses its mortgage book to determine the impact of a variety of combinations of home price declines, unemployment increases and rising interest rates. It benchmarks the scenarios against experience in various historical downturns to confirm that they are sufficiently robust tests of the portfolio. In stress, there are moderate increases in credit losses and negative impacts on capital ratios but within a level the Bank considers manageable. In practice, the portfolio is robust to such scenarios due to the low LTV of the book, the high proportion of insured exposures and the diversified composition of the portfolio.

**Loans to Canadian condominium developers**

With respect to loans to Canadian condominium developers, the Bank had loans outstanding of \$1,192 million as at October 31, 2018 (October 31, 2017 – \$949 million). This is a high quality portfolio with well-known developers who have long-term relationships with the Bank.

**European exposures**

The Bank believes that its European exposures are manageable, are sized appropriately relative to the credit worthiness of the counterparties (89% of the exposures are to investment grade counterparties based on a combination of internal and external ratings), and are modest relative to the capital levels of the Bank. The Bank's European exposures are certified at amortized cost or fair value using observable inputs, with negligible amounts valued using models with unobservable inputs (Level 3). There were no significant events in the quarter that have materially impacted the Bank's exposures.

The Bank's exposure to sovereigns was \$8.5 billion as at October 31, 2018 (October 31, 2017– \$8.9 billion), \$5.8 billion to banks (October 31, 2017 – \$5.7 billion) and \$15.8 billion to corporates (October 31, 2017– \$17.6 billion).

In addition to exposures detailed in the table below, the Bank had indirect exposures consisting of securities exposures to non-European entities whose parent company is domiciled in Europe of \$0.7 billion as at (October 31, 2017 – \$1.3 billion).

The Bank's current European exposure is distributed as follows:

**T43** Bank's exposure distribution by country

As at October 31	2018							2017
	Loans and loan equivalents <sup>(1)</sup>	Deposits with financial institutions	Securities <sup>(2)</sup>	SFT and derivatives <sup>(3)</sup>	Funded Total	Undrawn Commitments <sup>(4)</sup>	Total	Total
(\$ millions)								
Greece	\$ 146	\$ –	\$ –	\$ –	\$ 146	\$ –	\$ 146	\$ 213
Ireland	1,003	482	19	5	1,509	1,103	2,612	2,033
Italy	31	–	(2)	1	30	118	148	133
Portugal	–	–	–	2	2	–	2	1
Spain	944	7	553	50	1,554	147	1,701	826
Total GIIPS	\$ 2,124	\$ 489	\$ 570	\$ 58	\$ 3,241	\$ 1,368	\$ 4,609	\$ 3,206
U.K.	\$ 7,633	\$ 4,317	\$ 1,150	\$ 1,293	\$ 14,393	\$ 5,610	\$ 20,003	\$ 20,166
Germany	1,475	651	1,115	21	3,262	1,023	4,285	4,495
France	1,136	289	1,411	49	2,885	1,314	4,199	5,053
Netherlands	855	181	(142)	95	989	1,536	2,525	3,341
Switzerland	535	14	85	87	721	771	1,492	2,156
Other	1,926	255	2,175	236	4,592	3,396	7,988	8,068
Total Non-GIIPS	\$ 13,560	\$ 5,707	\$ 5,794	\$ 1,781	\$ 26,842	\$ 13,650	\$ 40,492	\$ 43,279
Total Europe	\$ 15,684	\$ 6,196	\$ 6,364	\$ 1,839	\$ 30,083	\$ 15,018	\$ 45,101	\$ 46,485
As at October 31, 2017	\$ 17,652	\$ 2,841	\$ 9,005	\$ 2,718	\$ 32,216	\$ 14,269	\$ 46,485	

(1) Individual allowances for credit losses are \$28. Letters of credit and guarantees are included as funded exposure as they have been issued. Included in loans and loans equivalent are letters of credit and guarantees which total \$3,867 as at October 31, 2018 (October 31, 2017 – \$3,366).

(2) Exposures for securities are calculated taking into account derivative positions where the security is the underlying reference asset and short trading positions, with net short positions in brackets.

(3) SFT comprise of securities purchased under resale agreements, obligations related to securities sold under repurchase agreements and securities lending and borrowing transactions. Gross and net funded exposures represent all net positive positions after taking into account collateral. Collateral held against derivatives was \$1,899 and collateral held against SFT was \$9,989.

(4) Undrawn commitments represent an estimate of the contractual amount that may be drawn upon by the obligor and include commitments to issue letters of credit on behalf of other banks in a syndicated bank lending arrangement.

## Market Risk

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

Index of all market risk disclosures			
Index	Page	Tables and charts	Page
Market risk factors	92		
Interest rate risk	92		
Credit spread risk	92		
Foreign currency risk	92		
Equity risk	92		
Commodity risk	92		
Market risk governance	92		
Risk measurement summary	92		
Value at risk	92		
Incremental risk charge	93		
Stress testing	93		
Sensitivity analysis	93		
Gap analysis	93		
Validation of market risk models	93		
Non-trading market risk	93		
Interest rate risk	93-94		
		T44 Interest rate gap	94
		T45 Structural interest sensitivity	94
Foreign currency risk	94-95		
Investment portfolio risks	95		
Trading market risk	95		
		T46 Market risk measures	95
		C26 Trading revenue distribution	95
		C27 Daily trading revenue vs. VaR	95
Market risk linkage to Consolidated Statement of Financial Position	96	T47 Market risk linkage to Consolidated Statement of Financial Position of the Bank	96
Derivative instruments and structured transactions	96		
Derivatives	96		
Structured transactions	97		
European exposures	90	T43 Bank's exposure distribution by country	90
Market risk	66-67	T34 Total market risk capital	67
Financial instruments	70	T37 Mortgage-backed securities	71

## Market risk factors

### Interest rate risk

The risk of loss due to changes in the level and/or the volatility of interest rates. This risk affects instruments such as, but not limited to, debt securities, loans, mortgages, deposits and derivatives.

Interest rate risks are managed through sensitivity, gap, stress testing, annual income and VaR limits and mitigated through portfolio diversification and hedges using interest rate derivatives and debt securities.

### Credit spread risk

The risk of loss due to changes in the market price and volatility of credit, or the creditworthiness of issuers. This risk is mainly concentrated in loan and debt securities portfolios. Risk is managed through sensitivity, jump-to-default, stress testing and VaR limits and mitigated through hedges using credit derivatives.

### Foreign currency risk

The risk of loss resulting from changes in currency exchange rates and exchange rate volatility. Foreign currency denominated debt and other securities as well as future cash flows in foreign currencies are exposed to this type of risk. Risk is managed through maximum net trading position, sensitivity, stress testing and VaR limits and mitigated through hedges using foreign exchange positions or derivatives.

### Equity risk

The risk of loss due to changes in prices, volatility or any other equity related risk factor of individual equity or equity linked securities. This risk affects instruments such as, but not limited to, equities, exchange traded funds, mutual funds, derivatives and other equity linked products. Risk is managed through sensitivity, stress testing and VaR limits and mitigated through hedges using physical equity and derivatives instruments.

### Commodity risk

The risk of loss due to changes in prices or volatility of precious metal, base metal, energy and agriculture products. Both physical commodity and derivatives positions are exposed to this risk. Risk is managed through aggregate and net trading position, sensitivity, stress testing and VaR limits and mitigated through hedges using physical commodity and derivative positions.

The following maps risk factors to trading and non-trading activities:

<u>Non-trading Funding</u>	<u>Investments</u>	<u>Trading</u>
Interest rate risk	Interest rate risk	Interest rate risk
Foreign currency risk	Credit spread risk	Credit spread risk
	Foreign currency risk	Foreign currency risk
	Equity risk	Equity risk
		Commodity risk

## Market risk governance

### Overview

The Board of Directors reviews and approves market risk policies and limits annually. The Bank's Asset-Liability Committee (ALCO) and Market Risk Management and Policy Committee (MRMPC) oversee the application of the framework set by the Board, and monitor the Bank's market risk exposures and the activities that give rise to these exposures. The MRMPC establishes specific operating policies and sets limits at the product, portfolio, business unit and business line levels, and for the Bank in total. Limits are reviewed at least annually.

Global Risk Management provides independent oversight of all significant market risks, supporting the MRMPC and ALCO with analysis, risk measurement, monitoring, reporting, proposals for standards and support for new product development. To ensure compliance with policies and limits, market risk exposures are independently monitored on a continuing basis, either by Global Risk Management, the back offices, or Finance. They provide senior management, business units, the ALCO, and the MRMPC with a series of daily, weekly and monthly reports of market risk exposures by business line and risk type.

The Bank uses a variety of metrics and models to measure and control market risk exposures. These measurements are selected based on an assessment of the nature of risks in a particular activity. The principal measurement techniques are Value at Risk (VaR), Incremental Risk Charge, stress testing, sensitivity analysis and gap analysis. The use and attributes of each of these techniques are noted in the Risk Measurement Summary.

### Risk measurement summary

#### Value at risk (VaR)

VaR is a statistical method of measuring potential loss due to market risk based upon a common confidence interval and time horizon. The Bank calculates VaR daily using a 99% confidence level, and a one-day holding period for its trading portfolios. This means that once in every 100 days, the trading positions are expected to lose more than the VaR estimate. VaR has two components: general market risk and debt specific risk. The Bank calculates general market risk VaR using historical simulation based on 300 days of market data. Obligor specific risk on debt instruments and credit derivatives not captured in general market risk VaR is calculated through the debt specific risk VaR, which uses historical resampling. In addition, the Bank calculates a Stressed VaR measure which follows the same basic methodology as VaR but is calibrated to a one year stressed period. The stressed period is determined based on analysis of the trading book's risk profile against historical market data. Stressed VaR complements VaR in that it evaluates the impact of market volatility that is outside the VaR's historical set.

All material risk factors are captured in VaR. Where historical data is not available, proxies are used to establish the relevant volatility for VaR and Stressed VaR until sufficient data is available. Changes in VaR between reporting periods are generally due to changes in positions, volatilities and/or correlations between asset classes. VaR is also used to evaluate risks arising in certain funding and investment portfolios. Backtesting is also an important and necessary part of the VaR process. The Bank backtests the actual trading profit and loss against the VaR result to validate the quality and accuracy of the Bank's VaR model. The Board reviews VaR and backtesting results quarterly.

### *Incremental Risk Charge (IRC)*

Basel market risk capital requirements includes IRC which captures the following:

*Default risk:* This is the potential for direct losses due to an obligor's (equity/bond issuer or counterparty) default.

*Credit migration risk:* This is the potential for direct losses due to a credit rating downgrade or upgrade.

A Monte Carlo model is used to perform default and migration simulations for the obligors underlying credit derivative and bond portfolios. IRC is calculated at the 99.9th percentile with a one year liquidity horizon. The Board reviews IRC results quarterly.

### *Stress testing*

A limitation of VaR and Stressed VaR is that they only reflect the recent history of market volatility and a specific one year stressed period, respectively. To complement these measures, stress testing examines the impact that abnormally large changes in market factors and periods of prolonged inactivity might have on trading portfolios. Stress testing scenarios are designed to include large shifts in risk factors as well as historical and theoretical multi risk market events. Historical scenarios capture severe movements over periods that are significantly longer than the one-day holding period captured in VaR, such as the 2008 Credit Crisis or the 1998 Russian Financial Crisis. Similar to Stressed VaR, stress testing provides management with information on potential losses due to tail events. In addition, the results from the stress testing program are used to verify that the Bank's market risk capital is sufficient to absorb these potential losses.

The Bank subjects its trading portfolios to a series of daily, weekly and monthly stress tests. The Bank also evaluates risk in its investment portfolios monthly, using stress tests based on risk factor sensitivities and specific market events. The stress testing program is an essential component of the Bank's comprehensive risk management framework which complements the VaR methodology and other risk measures and controls employed by the Bank. The Board reviews stress testing results quarterly.

### *Sensitivity analysis*

In trading portfolios, sensitivity analysis is used to measure the effect of changes in risk factors, including prices and volatility, on financial products and portfolios. These measures apply across product types and geographies and are used for limit monitoring and management reporting.

In non-trading portfolios, sensitivity analysis assesses the effect of changes in interest rates on current earnings and on the economic value of shareholders' equity. It is applied globally to each of the major currencies within the Bank's operations. The Bank's sensitivity analysis for limit and disclosure purposes is measured through positive and negative parallel shifts in the underlying interest rate curves. These calculations are based on a constant balance sheet and make no assumptions for management actions that may mitigate the risks. The Bank also performs sensitivity analysis using various non-parallel interest rate curve shifts, for example: curve steepeners, curve flatteners and curve twists.

### *Gap analysis*

Gap analysis is used to assess the interest rate sensitivity of re-pricing mismatches in the Bank's non-trading operations. Under gap analysis, interest rate sensitive assets, liabilities and off-balance sheet instruments are assigned to defined time periods based on expected re-pricing dates. Products with a contractual maturity are assigned an interest rate gap term based on the shorter of the contractual maturity date and the next re-pricing date. Products with no contractual maturity are assigned an interest rate gap based on observed historical consumer behaviour.

### **Validation of market risk models**

Prior to the implementation of new market risk models, rigorous validation and testing is conducted. Validation is conducted when the model is initially developed and when any significant changes are made to the model. The models are also subject to ongoing validation, the frequency of which is determined by model risk ratings. Models may also be triggered for earlier revalidation when there have been significant structural changes in the market or changes to the composition of the portfolio. Model validation includes backtesting, and additional analysis such as:

- Theoretical review or tests to demonstrate whether assumptions made within the internal model are appropriate; and
- Impact tests including stress testing that would occur under historical and hypothetical market conditions.

The validation process is governed by the Bank's Model Risk Management Policy.

### **Non-trading market risk**

#### **Funding and investment activities**

Market risk arising from the Bank's funding and investment activities is identified, managed and controlled through the Bank's asset-liability management processes. The Asset-Liability Committee meets monthly to review risks and opportunities, and evaluate performance including the effectiveness of hedging strategies.

#### *Interest rate risk*

Interest rate risks in the non-trading portfolios are predominately driven by the interest rate mismatch (i.e. re-pricing frequency) in the asset and liability exposures. The largest exposures in the non-trading book arise from retail banking operations in Canada. The largest component of this risk is from positions related to the retail mortgage book. T44 shows a summary of the interest rate gaps for the Bank's non-trading positions.

Interest rate risk arising from the Bank's lending, funding and investment activities is managed in accordance with Board-approved policies and global limits, which are designed to control the risk to net interest income and economic value of shareholders' equity. The annual income limit measures the effect of a specified change in interest rates on the Bank's annual net interest income over the next twelve months, while the economic value limit measures the impact of a specified change in interest rates on the present value of the Bank's net assets. These limits are set according to the documented risk appetite of the Bank. Board-level limit utilization is reported to both the Asset-Liability Committee and the Board on a regular basis. Any limit exceptions are reported according to the Limit Monitoring and Compliance Policy of the Bank.

Net interest income and the economic value of equity result from the differences between yields earned on the Bank's non-trading assets and interest rate paid on its liabilities. The difference in yields partly reflects mismatch between the maturity and re-pricing characteristics of the assets and liabilities. This mismatch is inherent in the non-trading operations of the Bank and exposes it to adverse changes in the level of interest rates. The Asset-Liability Committee provides strategic direction for the management of structural interest rate risk within the risk appetite framework authorized by the Board of Directors. The asset/liability management strategy is executed by Group Treasury with the objective of protecting and enhancing net interest income within established risk tolerances.

Gap analysis, simulation modeling, sensitivity analysis and VaR are used to assess exposures and for limit monitoring and planning purposes. The Bank's interest rate risk exposure calculations are generally based on the earlier of contractual re-pricing or maturity of on-balance sheet and off-balance sheet assets and liabilities, although certain assets and liabilities such as credit cards and deposits without a fixed maturity are assigned a maturity profile based on the longevity of the exposure. Expected prepayments from loans and cashable investment products are also incorporated into the exposure calculations.

T45 shows the after-tax impact of an immediate and sustained 100 basis point shock over a one year period on annual income and economic value of shareholders' equity. The interest rate sensitivities tabulated are based on a static balance sheet. There are no assumptions made for management actions that may mitigate risk. Based on the Bank's interest rate positions at year-end 2018, an immediate and sustained 100 basis point increase in interest rates across all currencies and maturities would decrease after-tax net interest income by approximately \$105 million over the next 12 months, assuming no further management actions. During fiscal 2018, this measure ranged between \$53 million and \$105 million.

This same increase in interest rates would result in an after-tax decrease in the present value of the Bank's net assets of approximately \$870 million. During fiscal 2018, this measure ranged between \$827 million and \$1097 million. The directional sensitivity of these two key metrics is largely determined by the difference in time horizons (annual income captures the impact over the next twelve months only, whereas economic value considers the potential impact of interest rate changes on the present value of all future cash flows). The annual income and economic value results are compared to the authorized Board limits. There were no limit breaches in the reporting period.

**T44** Interest rate gap

Interest rate sensitivity position <sup>(1)</sup> As at October 31, 2018 (\$ billions)	Within 3 months	3 to 12 months	Over 1 year	Non-interest rate sensitive	<b>Total</b>
<b>Canadian dollars</b>					
Assets	\$ 221.1	\$ 50.3	\$ 165.1	\$ 9.3	<b>\$445.8</b>
Liabilities	\$ 264.0	\$ 59.3	\$ 107.0	\$ 15.5	<b>\$445.8</b>
Gap	\$ (42.9)	\$ (9.0)	\$ 58.1	\$ (6.2)	<b>\$ -</b>
<b>Foreign currencies</b>					
Assets	\$ 337.9	\$ 42.1	\$ 87.6	\$ 85.1	<b>\$552.7</b>
Liabilities	\$ 332.4	\$ 43.0	\$ 69.4	\$ 107.9	<b>\$552.7</b>
Gap	\$ 5.5	\$ (0.9)	\$ 18.2	\$ (22.8)	<b>\$ -</b>
<b>Total</b>					
Gap	\$ (37.4)	\$ (9.9)	\$ 76.3	\$ (29.0)	<b>\$ -</b>
As at October 31, 2017					
Gap	\$ (0.9)	\$ 1.9	\$ 28.8	\$ (29.8)	<b>\$ -</b>

(1) The above figures reflect the inclusion of off-balance sheet instruments, as well as an estimate of prepayments on consumer and mortgage loans and cashable GICs.

**T45** Structural interest sensitivity

As at October 31 (\$ millions)	2018		2017	
	Economic Value of Shareholders' Equity	Annual Income	Economic Value of Shareholders' Equity	Annual Income
After-tax impact of				
100bp increase in rates				
Non-trading risk	\$ (870)	\$ (105)	\$ (354)	\$ 64
100bp decrease in rates				
Non-trading risk	\$ 797	\$ 101	\$ 183	\$ (67)

**Foreign currency risk**

Foreign currency risk in the Bank's unhedged funding and investment activities arises primarily from the Bank's net investments in foreign operations as well as foreign currency earnings in its domestic and remitting foreign branch operations.

The Bank's foreign currency exposure to its net investments in foreign operations is controlled by a Board-approved limit. This limit considers factors such as potential volatility to shareholders' equity as well as the potential impact on capital ratios from foreign exchange fluctuations. On a quarterly basis, the Asset-Liability Committee reviews the Bank's foreign currency net investment exposures and determines the appropriate hedging strategies. These may include funding the investments in the same currency or using other financial instruments, including derivatives.

Foreign currency translation gains and losses from net investments in foreign operations, net of related hedging activities and tax effects, are recorded in accumulated other comprehensive income within shareholders' equity. However, the Bank's regulatory capital ratios are not materially affected by these foreign exchange fluctuations because the risk-weighted assets of the foreign operations tend to move in a similar direction.

The Bank is also subject to foreign currency translation risk on the earnings of its domestic and remitting foreign branch operations. The Bank forecasts foreign currency revenues and expenses, which are primarily denominated in U.S. dollars, over a number of future fiscal quarters. The Asset-Liability Committee also assesses economic data trends and forecasts to determine if some or all of the estimated future foreign currency revenues and expenses should be hedged. Hedging instruments normally include foreign currency spot and forward contracts, as well as foreign currency options and swaps. Certain of these economic hedges may not qualify for hedge accounting resulting in a potential for a mismatch in the timing of the recognition of economic hedge gains/losses and the underlying foreign earnings translation gains/losses. In accordance with IFRS, foreign currency translation gains and losses relating to monetary and non-monetary items are recorded directly in earnings.

As at October 31, 2018, a one percent increase (decrease) in the Canadian dollar against all currencies in which the Bank operates decreases (increases) the Bank's before-tax annual earnings by approximately \$65 million (October 31, 2017 – \$58 million) in the absence of hedging activity, primarily from the exposure to U.S. dollars.

#### Investment portfolio risks

The Bank holds investment portfolios to meet liquidity and statutory reserve requirements and for investment purposes. These portfolios expose the Bank to interest rate, foreign currency, credit spread and equity risks. Debt investments primarily consist of government, agency, and corporate bonds. Equity investments include common and preferred shares, as well as a diversified portfolio of third-party managed funds. The majority of these securities are valued using prices obtained from external sources. These portfolios are controlled by a Board-approved policy and limits.

#### Trading market risk

The Bank's policies, processes and controls for trading activities are designed to achieve a balance between pursuing profitable trading opportunities and managing earnings volatility within a framework of sound and prudent practices. Trading activities are primarily customer focused.

Market risk arising from the Bank's trading activities is managed in accordance with Board-approved policies, and aggregate VaR and stress testing limits. The quality of the Bank's VaR is validated by regular backtesting analysis, in which the VaR is compared to both theoretical profit and loss results based on fixed end of day positions and actual reported profit and loss. A VaR at the 99% confidence interval is an indication of a 1% probability that losses will exceed the VaR if positions remain unchanged during the next business day. Trading positions are however managed dynamically and, as a result, actual profit/loss backtesting exceptions are uncommon.

In fiscal 2018, the total one-day VaR for trading activities averaged \$12.9 million, compared to \$11.2 million in 2017.

#### T46 Market risk measures

(\$ millions)	2018				2017			
	Year end	Avg	High	Low	Year end	Avg	High	Low
Credit Spread plus Interest Rate	\$ 11.0	\$ 11.6	\$ 17.8	\$ 6.9	\$ 10.1	\$ 10.8	\$ 15.1	\$ 8.0
Credit Spread	6.2	7.8	12.2	4.8	6.9	6.3	9.1	4.1
Interest Rate	7.7	9.5	17.2	4.3	8.4	8.4	12.0	5.3
Equities	5.8	3.0	15.5	1.2	3.2	2.2	4.8	1.0
Foreign Exchange	2.8	3.3	5.8	1.1	2.9	2.2	5.5	0.7
Commodities	1.7	1.6	2.1	1.0	1.3	1.4	2.6	0.6
Debt Specific	3.6	3.4	4.2	2.6	3.3	3.6	5.1	2.4
Diversification Effect	(11.7)	(10.0)	n/a	n/a	(10.2)	(9.0)	n/a	n/a
All-Bank VaR	\$ 13.2	\$ 12.9	\$ 18.4	\$ 8.6	\$ 10.6	\$ 11.2	\$ 14.9	\$ 9.1
All-Bank Stressed VaR	\$ 44.6	\$ 42.7	\$ 59.0	\$ 26.3	\$ 34.7	\$ 28.5	\$ 44.5	\$ 19.2
Incremental Risk Charge	\$ 77.9	\$ 173.4	\$ 474.7	\$ 60.0	\$ 144.5	\$ 271.2	\$ 399.8	\$ 144.5

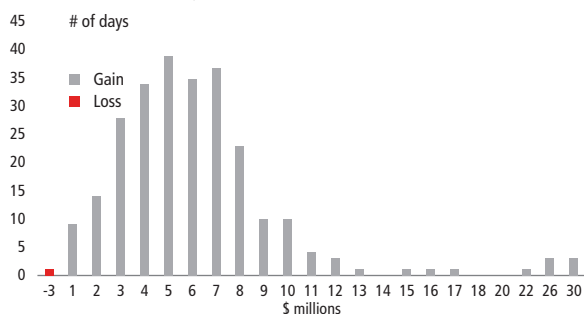
The Bank also calculates a Stressed VaR which uses the same basic methodology as the VaR. However, Stressed VaR is calculated using market volatility from a one-year time period identified as stressful, given the risk profile of the trading portfolio. The current period is the 2008/2009 credit crisis surrounding the collapse of Lehman Brothers. In fiscal 2018, the total one-day Stressed VaR for trading activities averaged \$42.7 million compared to \$28.5 million in 2017.

In fiscal 2018, the average IRC decreased to \$173.4 million from \$271.2 million in 2017, primarily driven by reduced emerging market exposure.

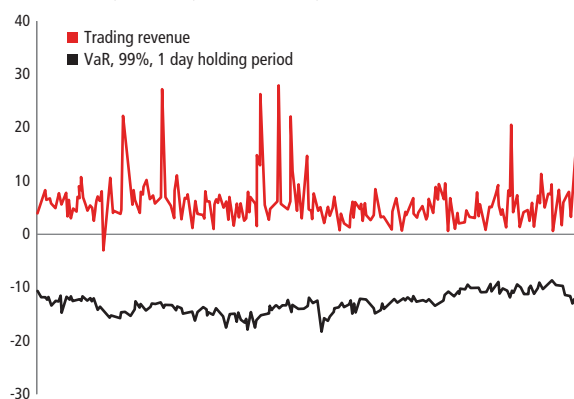
#### Description of trading revenue components and graphical comparison of VaR to daily P&L

Chart C26 shows the distribution of daily trading revenue for fiscal 2018 and Chart C27 compares that distribution to daily VaR results. Trading revenue includes changes in portfolio value as well as the impact of new trades, commissions, fees and reserves. Some components of revenue which are calculated less frequently are pro-rated. Trading revenue averaged \$5.9 million per day, compared to \$6.0 million in 2017. Revenue was positive on 99.6% of trading days during the year, an increase from 99% in 2017. During the year, the largest single day trading loss was \$3.2 million which occurred on December 15, 2017, and was smaller than the total VaR of \$13.8 million on the same day.

**C26** Trading revenue distribution  
Year ended October 31, 2018



**C27** Daily trading revenue vs. VaR  
\$ millions, November 1, 2017 to October 31, 2018



**Market risk linkage to Consolidated Statement of Financial Position**

Trading assets and liabilities are marked to market daily and included in trading risk measures such as VaR. Derivatives risk related to Global Banking and Markets' activities is captured under trading risk measures while derivatives used in asset/liability management are in the non-trading risk category. A comparison of Consolidated Statement of Financial Position items which are covered under the trading and non-trading risk measures is provided in the table below.

**T47 Market risk linkage to Consolidated Statement of Financial Position of the Bank**

As at October 31, 2018 (\$ millions)	Market Risk Measure				Primary risk sensitivity of non-trading risk
	Consolidated Statement of Financial Position	Trading Risk	Non-trading risk	Not subject to market risk	
Precious metals	\$ 3,191	\$ 3,191	\$ –	\$ –	n/a
Trading assets	100,262	99,650	612	–	Interest rate, FX
Financial instruments designated at fair value through profit or loss	12	–	12	–	Interest rate
Derivative financial instruments	37,558	33,937	3,621	–	Interest rate, FX, equity
Investment securities	78,396	–	78,396	–	Interest rate, FX, equity
Loans	551,834	–	551,834	–	Interest rate, FX
Assets not subject to market risk <sup>(1)</sup>	227,240	–	–	227,240	n/a
<b>Total assets</b>	<b>\$ 998,493</b>	<b>\$ 136,778</b>	<b>\$ 634,475</b>	<b>\$ 227,240</b>	
Deposits	\$ 676,534	\$ –	\$ 641,791	\$ 34,743	Interest rate, FX, equity
Financial instruments designated at fair value through profit or loss	8,188	–	8,188	–	Interest rate, equity
Obligations related to securities sold short	32,087	32,087	–	–	n/a
Derivative financial instruments	37,967	32,300	5,667	–	Interest rate, FX, equity
Trading liabilities <sup>(2)</sup>	5,019	5,019	–	–	n/a
Retirement and other benefit liabilities	1,727	–	1,727	–	Interest rate, credit spread, equity
Liabilities not subject to market risk <sup>(3)</sup>	169,291	–	–	169,291	n/a
<b>Total liabilities</b>	<b>\$ 930,813</b>	<b>\$ 69,406</b>	<b>\$ 657,373</b>	<b>\$ 204,034</b>	

(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, 2017 <sup>(1)</sup> (\$ millions)	Market Risk Measure				Primary risk sensitivity of non-trading risk
	Consolidated Statement of Financial Position	Trading Risk	Non-trading risk	Not subject to market risk	
Precious metals	\$ 5,717	\$ 5,717	\$ –	\$ –	n/a
Trading assets	98,464	98,464	–	–	n/a
Financial instruments designated at fair value through profit or loss	13	–	13	–	Interest rate
Derivative financial instruments	35,366	30,648	4,716	–	Interest rate, FX, equity
Investment securities	69,269	–	69,269	–	Interest rate, FX, equity
Loans	504,369	–	504,369	–	Interest rate, FX
Assets not subject to market risk <sup>(2)</sup>	202,077	–	–	202,077	n/a
<b>Total assets</b>	<b>\$ 915,273</b>	<b>\$ 134,829</b>	<b>\$ 578,367</b>	<b>\$ 202,077</b>	
Deposits	\$ 625,367	\$ –	\$ 593,174	\$ 32,193	Interest rate, FX, equity
Financial instruments designated at fair value through profit or loss	4,663	–	4,663	–	Interest rate, equity
Obligations related to securities sold short	30,766	30,766	–	–	n/a
Derivative financial instruments	34,200	30,545	3,655	–	Interest rate, FX, equity
Trading liabilities <sup>(3)</sup>	6,819	6,819	–	–	n/a
Retirement and other benefit liabilities	2,201	–	2,201	–	Interest rate, credit spread, equity
Liabilities not subject to market risk <sup>(4)</sup>	149,632	–	–	149,632	n/a
<b>Total liabilities</b>	<b>\$ 853,648</b>	<b>\$ 68,130</b>	<b>\$ 603,693</b>	<b>\$ 181,825</b>	

(1) Amounts have not been restated in accordance with IFRS 9; prior period amounts are prepared in accordance with IAS 39 (refer to Notes 3 and 4 in the consolidated financial statements).

(2) Includes goodwill, intangibles, other assets and securities purchased under resale agreements and securities borrowed.

(3) Gold and silver certificates and bullion included in other liabilities.

(4) Includes obligations related to securities sold under repurchase agreements and securities lent and other liabilities.

**Derivative instruments and structured transactions**
**Derivatives**

The Bank uses derivatives to meet customer needs, generate revenues from trading activities, manage market and credit risks arising from its lending, funding and investment activities, and to lower its cost of capital. The Bank uses several types of derivative products, including interest rate swaps, futures and options, to hedge interest rate risk exposure. Forward contracts, swaps and options are used to manage foreign currency risk exposures. Credit exposures in its lending and investment books are managed using credit default swaps. As a dealer, the Bank markets a range of derivatives to its customers, including interest rate, foreign exchange, equity, commodity and credit derivatives.

Market risk arising from derivatives transactions is subject to the control, reporting and analytical techniques noted above. Additional controls and analytical techniques are applied to address certain market-related risks that are unique to derivative products.

### Structured transactions

Structured transactions are specialized transactions that may involve combinations of cash, other financial assets and derivatives designed to meet the specific risk management or financial requirements of customers. These transactions are carefully evaluated by the Bank to identify and address the credit, market, legal, tax, reputational and other risks, and are subject to a cross-functional review and sign-off by Trading Management, Global Risk Management, Taxation, Finance and Legal departments. Large structured transactions are also subject to review by senior risk management committees and evaluated in accordance with the procedures described below in Reputational Risk.

The market risk in these transactions is usually minimal, and returns are earned by providing structuring expertise and by taking credit risk. Once executed, structured transactions are subject to the same ongoing credit reviews and market risk analysis as other types of derivatives transactions. This review and analysis includes careful monitoring of the quality of the reference assets, and ongoing valuation of the derivatives and reference assets.

### Liquidity Risk

**Liquidity risk is the risk that the Bank is unable to meet its financial obligations in a timely manner at reasonable prices. Financial obligations include liabilities to depositors, payments due under derivative contracts, settlement of securities borrowing and repurchase transactions, and lending and investment commitments.**

Effective liquidity risk management is essential to maintain the confidence of depositors and counterparties, manage the Bank's cost of funds and to support core business activities, even under adverse circumstances.

Liquidity risk is managed within the framework of policies and limits that are approved by the Board of Directors. The Board receives reports on risk exposures and performance against approved limits. The Asset-Liability Committee (ALCO) provides senior management oversight of liquidity risk.

The key elements of the liquidity risk framework are:

- Measurement and modeling – the Bank's liquidity model measures and forecasts cash inflows and outflows, including off-balance sheet cash flows on a daily basis. Risk is managed by a set of key limits over the maximum net cash outflow by currency over specified short-term horizons (cash gaps), a minimum level of core liquidity, and liquidity stress tests.
- Reporting – Global Risk Management provides independent oversight of all significant liquidity risks, supporting the ALCO with analysis, risk measurement, stress testing, monitoring and reporting.
- Stress testing – the Bank performs liquidity stress testing on a regular basis, to evaluate the effect of both industry-wide and Bank-specific disruptions on the Bank's liquidity position. Liquidity stress testing has many purposes including:
  - Helping the Bank understand the potential behavior of various on-balance sheet and off-balance sheet positions in circumstances of stress; and
  - Based on this knowledge, facilitating the development of risk mitigation and contingency plans.

The Bank's liquidity stress tests consider the effect of changes in funding assumptions, depositor behavior and the market value of liquid assets. The Bank performs industry standard stress tests, the results of which are reviewed at senior levels of the organization and are considered in making liquidity management decisions.

- Contingency planning – the Bank maintains a liquidity contingency plan that specifies an approach for analyzing and responding to actual and potential liquidity events. The plan outlines an appropriate governance structure for the management and monitoring of liquidity events, processes for effective internal and external communication, and identifies potential counter measures to be considered at various stages of an event. A contingency plan is maintained both at the parent-level as well as for major subsidiaries.
- Funding diversification – the Bank actively manages the diversification of its deposit liabilities by source, type of depositor, instrument, term and geography.
- Core liquidity – the Bank maintains a pool of highly liquid, unencumbered assets that can be readily sold or pledged to secure borrowings under stressed market conditions or due to Bank-specific events. The Bank also maintains liquid assets to support its intra-day settlement obligations in payment, depository and clearing systems.

### Liquid assets

Liquid assets are a key component of liquidity management and the Bank holds these types of assets in sufficient quantity to meet potential needs for liquidity management.

Liquid assets can be used to generate cash either through sale, repurchase transactions or other transactions where these assets can be used as collateral to generate cash, or by allowing the asset to mature. Liquid assets include deposits at central banks, deposits with financial institutions, call and other short-term loans, marketable securities, precious metals and securities received as collateral from securities financing and derivative transactions. Liquid assets do not include borrowing capacity from central bank facilities.

Marketable securities are securities traded in active markets, which can be converted to cash within a timeframe that is in accordance with the Bank's liquidity management framework. Assets are assessed considering a number of factors, including the expected time it would take to convert them to cash.

Marketable securities included in liquid assets are comprised of securities specifically held as a liquidity buffer or for asset liability management purposes; trading securities, which are primarily held by Global Banking and Markets; and collateral received for securities financing and derivative transactions.

The Bank maintains large holdings of unencumbered liquid assets to support its operations. These assets generally can be sold or pledged to meet the Bank's obligations. As at October 31, 2018, unencumbered liquid assets were \$202 billion (October 31, 2017 – \$180 billion). Securities including NHA mortgage-backed securities, comprised 71% of liquid assets (October 31, 2017 – 67%). Other unencumbered liquid assets, comprising cash and deposits with central banks, deposits with financial institutions, precious metals and call and short loans, were 29% (October 31, 2017 – 33%). The increase in liquid assets was mainly attributable to an increase in unencumbered foreign government obligations, deposits with financial institutions and NHA mortgage-backed securities, which was partially offset by a decrease in cash and deposits with central banks and precious metals.

MANAGEMENT'S DISCUSSION AND ANALYSIS

The carrying values outlined in the liquid asset table are consistent with the carrying values in the Bank's Consolidated Statement of Financial Position as at October 31, 2018. The liquidity value of the portfolio will vary under different stress events as different assumptions are used for the stress scenarios.

The Bank's liquid asset pool is summarized in the following table:

**T48** Liquid asset pool

As at October 31, 2018 (\$ millions)	Bank-owned liquid assets	Securities received as collateral from securities financing and derivative transactions	Total liquid assets	Encumbered liquid assets		Unencumbered liquid assets	
				Pledged as collateral	Other <sup>(1)</sup>	Available as collateral	Other
Cash and deposits with central banks	\$ 48,352	\$ –	\$ 48,352	\$ –	\$ 7,906	\$ 40,446	\$ –
Deposits with financial institutions	13,917	–	13,917	–	73	13,844	–
Precious metals	3,191	–	3,191	–	70	3,121	–
Securities:							
Canadian government obligations	45,260	11,050	56,310	29,464	–	26,846	–
Foreign government obligations	60,553	63,816	124,369	68,531	–	55,838	–
Other securities	54,786	66,704	121,490	92,280	–	29,210	–
Loans:							
NHA mortgage-backed securities <sup>(2)</sup>	34,636	–	34,636	2,605	–	32,031	–
Call and short loans	1,047	–	1,047	–	–	1,047	–
<b>Total</b>	<b>\$ 261,742</b>	<b>\$ 141,570</b>	<b>\$ 403,312</b>	<b>\$ 192,880</b>	<b>\$ 8,049</b>	<b>\$ 202,383</b>	<b>\$ –</b>

As at October 31, 2017 <sup>(3)</sup> (\$ millions)	Bank-owned liquid assets	Securities received as collateral from securities financing and derivative transactions	Total liquid assets	Encumbered liquid assets		Unencumbered liquid assets	
				Pledged as collateral	Other <sup>(1)</sup>	Available as collateral	Other
Cash and deposits with central banks	\$ 49,754	\$ –	\$ 49,754	\$ –	\$ 7,306	\$ 42,448	\$ –
Deposits with financial institutions	9,909	–	9,909	–	108	9,801	–
Precious metals	5,717	–	5,717	–	123	5,594	–
Securities:							
Canadian government obligations	41,791	9,836	51,627	24,505	–	27,122	–
Foreign government obligations	47,388	54,286	101,674	75,362	–	26,312	–
Other securities	56,444	59,590	116,034	79,363	–	36,671	–
Loans:							
NHA mortgage-backed securities <sup>(2)</sup>	33,327	–	33,327	2,360	–	30,967	–
Call and short loans	1,405	–	1,405	–	–	1,405	–
<b>Total</b>	<b>\$ 245,735</b>	<b>\$ 123,712</b>	<b>\$ 369,447</b>	<b>\$ 181,590</b>	<b>\$ 7,537</b>	<b>\$ 180,320</b>	<b>\$ –</b>

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

(2) These mortgage-backed securities, which are available for sale, are reported as residential mortgage loans on the Consolidated Statement of Financial Position.

(3) Amounts have not been restated in accordance with IFRS 9; prior period amounts are prepared in accordance with IAS 39 (refer to Notes 3 and 4 in the consolidated financial statements).

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

**T49** Total unencumbered liquid assets held by the parent bank and its branches, and domestic and foreign subsidiaries

As at October 31 (\$ millions)	2018	2017
The Bank of Nova Scotia (Parent)	\$ 152,728	\$ 131,838
Bank domestic subsidiaries	15,344	13,753
Bank foreign subsidiaries	34,311	34,729
<b>Total</b>	<b>\$ 202,383</b>	<b>\$ 180,320</b>

The Bank's liquidity pool is held across major currencies, mostly comprised of Canadian and U.S. dollar holdings. As shown above, the vast majority (83%) of liquid assets are held by the Bank's corporate office, branches of the Bank, and Canadian subsidiaries of the Bank. To the extent a liquidity reserve held in a foreign subsidiary of the Bank is required for regulatory purposes, it is assumed to be unavailable to the rest of the Group. Other liquid assets held by a foreign subsidiary are assumed to be available only in limited circumstances. The Bank monitors and ensures compliance in relation to minimum levels of liquidity required and assets held within each entity, and/or jurisdiction.

## Encumbered assets

In the course of the Bank's day-to-day activities, securities and other assets are pledged to secure an obligation, participate in clearing or settlement systems, or operate in a foreign jurisdiction. Securities are also pledged under repurchase agreements. A summary of encumbered and unencumbered assets is presented below:

### T50 Asset encumbrance

As at October 31, 2018 (\$ millions)	Bank-owned assets	Securities received as collateral from securities financing and derivative transactions	Total assets	Encumbered assets		Unencumbered assets	
				Pledged as collateral	Other <sup>(1)</sup>	Available as collateral <sup>(2)</sup>	Other <sup>(3)</sup>
Cash and deposits with central banks	\$ 48,352	\$ –	\$ 48,352	\$ –	\$ 7,906	\$ 40,446	\$ –
Deposits with financial institutions	13,917	–	13,917	–	73	13,844	–
Precious metals	3,191	–	3,191	–	70	3,121	–
Liquid securities:							
Canadian government obligations	45,260	11,050	56,310	29,464	–	26,846	–
Foreign government obligations	60,553	63,816	124,369	68,531	–	55,838	–
Other liquid securities	54,786	66,704	121,490	92,280	–	29,210	–
Other securities	3,283	5,400	8,683	4,978	–	–	3,705
Loans classified as liquid assets:							
NHA mortgage-backed securities	34,636	–	34,636	2,605	–	32,031	–
Call and short loans	1,047	–	1,047	–	–	1,047	–
Other loans	530,485	–	530,485	8,430	59,460	12,864	449,731
Other financial assets <sup>(4)</sup>	163,209	(92,624)	70,585	2,619	–	–	67,966
Non-financial assets	39,774	–	39,774	–	–	–	39,774
<b>Total</b>	<b>\$ 998,493</b>	<b>\$ 54,346</b>	<b>\$ 1,052,839</b>	<b>\$ 208,907</b>	<b>\$ 67,509</b>	<b>\$ 215,247</b>	<b>\$ 561,176</b>

As at October 31, 2017 (\$ millions)	Bank-owned assets	Securities received as collateral from securities financing and derivative transactions	Total assets	Encumbered assets		Unencumbered assets	
				Pledged as collateral	Other <sup>(1)</sup>	Available as collateral <sup>(2)</sup>	Other <sup>(3)</sup>
Cash and deposits with central banks	\$ 49,754	\$ –	\$ 49,754	\$ –	\$ 7,306	\$ 42,448	\$ –
Deposits with financial institutions	9,909	–	9,909	–	108	9,801	–
Precious metals	5,717	–	5,717	–	123	5,594	–
Liquid securities:							
Canadian government obligations	41,791	9,836	51,627	24,505	–	27,122	–
Foreign government obligations	47,388	54,286	101,674	75,362	–	26,312	–
Other liquid securities	56,444	59,590	116,034	79,363	–	36,671	–
Other securities	2,311	4,645	6,956	2,916	–	–	4,040
Loans classified as liquid assets:							
NHA mortgage-backed securities	33,327	–	33,327	2,360	–	30,967	–
Call and short loans	1,405	–	1,405	–	–	1,405	–
Other loans	486,949	–	486,949	6,072	54,746	12,721	413,410
Other financial assets <sup>(4)</sup>	151,329	(85,691)	65,638	4,212	–	–	61,426
Non-financial assets	28,949	–	28,949	–	–	–	28,949
<b>Total</b>	<b>\$ 915,273</b>	<b>\$ 42,666</b>	<b>\$ 957,939</b>	<b>\$ 194,790</b>	<b>\$ 62,283</b>	<b>\$ 193,041</b>	<b>\$ 507,825</b>

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

(2) Assets that are readily available in the normal course of business to secure funding or meet collateral needs including central bank borrowing immediately available.

(3) Other unencumbered assets are not subject to any restrictions on their use to secure funding or as collateral but the Bank would not consider them to be readily available. These include loans, a portion of which may be used to access central bank facilities outside of the normal course or to raise secured funding through the Bank's secured funding programs.

(4) Securities received as collateral against other financial assets are included within liquid securities and other securities.

As of October 31, 2018, total encumbered assets of the Bank were \$276 billion (October 31, 2017 – \$257 billion). Of the remaining \$776 billion (October 31, 2017 – \$701 billion) of unencumbered assets, \$215 billion (October 31, 2017 – \$193 billion) are considered readily available in the normal course of business to secure funding or meet collateral needs as detailed above.

In some over-the-counter derivative contracts, the Bank would be required to post additional collateral or receive less collateral in the event its credit rating was downgraded. The Bank maintains access to sufficient collateral to meet these obligations in the event of a downgrade of its ratings by one or more of the rating agencies. As at October 31, 2018, the potential adverse impact on derivatives collateral that would result from a one-notch or two-notch downgrade of the Bank's rating below its lowest current rating was \$50 million or \$306 million, respectively.

Encumbered liquid assets are not considered to be available for liquidity management purposes. Liquid assets which are used to hedge derivative positions in trading books or for hedging purposes are considered to be available for liquidity management provided they meet the criteria discussed in liquid assets above.

## Liquidity coverage ratio

The Liquidity Coverage Ratio measure (LCR) is based on a 30-day liquidity stress scenario, with assumptions defined in the OSFI Liquidity Adequacy Requirements (LAR) Guideline. The LCR is calculated as the ratio of high quality liquid assets (HQLA) to net cash outflows. The Bank is subject to a regulatory minimum LCR of 100%.

MANAGEMENT'S DISCUSSION AND ANALYSIS

OSFI's LAR stipulates that banks must maintain an adequate level of unencumbered HQLA that can be converted into cash to meet liquidity needs over a 30 calendar day horizon under a pre-defined significantly severe liquidity stress scenario. The LCR-prescribed liquidity stress scenario includes assumptions for asset haircuts, deposit run-off, wholesale rollover rates, and outflow rates for commitments.

HQLA are grouped into three categories: Level 1, Level 2A and Level 2B, based on guidelines from the LAR. Level 1 HQLA receive no haircuts, and includes cash, deposits with central banks, central bank reserves available to the Bank in times of stress, and securities with a 0% risk weight. Level 2A and 2B include HQLA of lesser quality and attracts haircuts ranging from 15%-50%.

The total weighted values for net cash outflows for the next 30 days are derived by applying the assumptions specified in the LAR Guideline to specific items, including loans, deposits, maturing debt, derivative transactions and commitments to extend credit.

The following table presents the Bank's average LCR for the quarter ended October 31, 2018, based on the average daily position in the quarter.

**T51** Bank's average LCR

	Total unweighted value (Average) <sup>(2)</sup>	Total weighted value (Average) <sup>(3)</sup>
For the quarter ended October 31, 2018 (\$ millions) <sup>(1)</sup>		
<b>High-quality liquid assets</b>		
Total high-quality liquid assets (HQLA)	*	\$ 144,349
<b>Cash outflows</b>		
Retail deposits and deposits from small business customers, of which:	\$ 173,809	12,191
Stable deposits	76,795	2,490
Less stable deposits	97,014	9,701
Unsecured wholesale funding, of which:	179,528	87,967
Operational deposits (all counterparties) and deposits in networks of cooperative banks	56,756	13,596
Non-operational deposits (all counterparties)	96,549	48,148
Unsecured debt	26,223	26,223
Secured wholesale funding	*	35,239
Additional requirements, of which:	198,215	42,822
Outflows related to derivative exposures and other collateral requirements	26,346	18,481
Outflows related to loss of funding on debt products	3,605	3,605
Credit and liquidity facilities	168,264	20,736
Other contractual funding obligations	1,231	1,186
Other contingent funding obligations <sup>(4)</sup>	454,996	7,678
<b>Total cash outflows</b>	*	\$ 187,083
<b>Cash inflows</b>		
Secured lending (e.g. reverse repos)	\$ 130,332	\$ 29,206
Inflows from fully performing exposures	24,564	15,738
Other cash inflows	25,404	25,404
<b>Total cash inflows</b>	\$ 180,300	\$ 70,348
		Total adjusted value <sup>(5)</sup>
<b>Total HQLA</b>	*	\$ 144,349
<b>Total net cash outflows</b>	*	\$ 116,735
<b>Liquidity coverage ratio (%)</b>	*	<b>124%</b>

	Total adjusted value <sup>(5)</sup>
For the quarter ended October 31, 2017 (\$ millions)	
Total HQLA	* \$ 127,444
Total net cash outflows	* \$ 101,751
Liquidity coverage ratio (%)	* 125%

\* Disclosure is not required under regulatory guideline.

(1) Based on the average daily positions of the 63 business days in the quarter.

(2) Unweighted values represent outstanding balances maturing or callable within the next 30 days.

(3) Weighted values represent balances calculated after the application of HQLA haircuts or inflow and outflow rates, as prescribed by the OSFI LAR guidelines.

(4) Total unweighted value includes uncommitted credit and liquidity facilities, guarantees and letters of credit, outstanding debt securities with remaining maturity greater than 30 days, and other contractual cash outflows.

(5) Total adjusted value represents balances calculated after the application of both haircuts and inflow and outflow rates and any applicable caps.

HQLA continues to be substantially comprised of Level 1 assets. The Bank's average LCR for the quarter ended October 31, 2018 was in line with the quarter ended October 31, 2017.

The Bank's significant operating currencies are Canadian and U.S. dollars. The Bank monitors its significant currency exposures in accordance with its liquidity risk management framework and risk appetite.

## Funding

The Bank ensures that its funding sources are well diversified. Funding concentrations are regularly monitored and analyzed by type. The sources of funding are capital, deposits from retail and commercial clients sourced through the Canadian and international branch network, deposits from financial institutions as well as wholesale debt issuances.

Capital and personal deposits are key components of the Bank's core funding and these amounted to \$289 billion as at October 31, 2018 (October 31, 2017 – \$269 billion). The increase since October 31, 2017, was primarily due to deposit growth, internal capital generation and common and preferred share issuance, net of common share repurchases and redemptions of preferred shares and subordinated debentures. A portion of commercial deposits, particularly those of an operating or relationship nature, would be considered part of the Bank's core funding. Furthermore, core funding is augmented by longer term wholesale debt issuances (original maturity over 1 year) of \$157 billion (October 31, 2017 – \$146 billion). Longer term wholesale debt issuances include senior notes, mortgage securitizations, asset-backed securities and covered bonds.

The Bank operates in many different currencies and countries. From a funding perspective, the most significant currencies are Canadian and U.S. dollars. With respect to the Bank's operations outside Canada, there are different funding strategies depending on the nature of the activities in each country. For those countries where the Bank operates a branch banking subsidiary, the strategy is for the subsidiary to be substantially self-funding in its local market. For other subsidiaries or branches outside Canada where local deposit gathering capability is not sufficient, funding is provided through the wholesale funding activities of the Bank.

From an overall funding perspective the Bank's objective is to achieve an appropriate balance between the cost and the stability of funding. Diversification of funding sources is a key element of the funding strategy.

The Bank's wholesale debt diversification strategy is primarily executed via the Bank's main wholesale funding centres, located in Toronto, New York, London and Singapore. The majority of these funds are sourced in Canadian and U.S. dollars. Where required, these funds are swapped to fund assets in different currencies. The funding strategy deployed by wholesale funding centres and the management of associated risks, such as geographic and currency risk, are managed centrally within the framework of policies and limits that are approved by the Board of Directors.

In the normal course, the Bank uses a mix of unsecured and secured wholesale funding instruments across a variety of markets. The choice of instruments and markets is based on a number of factors, including relative cost and market capacity as well as an objective of maintaining a diversified mix of sources of funding. Market conditions can change over time, impacting cost and capacity in particular markets or instruments. Changing market conditions can include periods of stress where the availability of funding in particular markets or instruments is constrained. In these circumstances the Bank would increase its focus on sources of funding in functioning markets and secured funding instruments. Should a period of extreme stress exist such that all wholesale funding sources are constrained, the Bank maintains a pool of liquid assets to mitigate its liquidity risk. This pool includes cash, deposits with central banks and securities.

In Canada, the Bank raises short- and longer-term wholesale debt through the issuance of senior unsecured notes. Additional longer-term wholesale debt may be generated through the Bank's Canadian Debt and Equity Shelf, the securitization of Canadian insured residential mortgages through CMHC securitization programs (such as Canada Mortgage Bonds), uninsured residential mortgages through the Bank's Covered Bond Program, unsecured personal lines of credit through the Halifax Receivables Trust (previously Hollis Receivables Term Trust II) program, retail credit card receivables through the Trillium Credit Card Trust II program and retail indirect auto loan receivables through the Securitized Term Auto Receivables Trust program. While the Bank includes CMHC securitization programs in its view of wholesale debt issuance, this source of funding does not entail the run-off risk that can be experienced in funding raised from capital markets.

Outside of Canada, short-term wholesale debt may be raised through the issuance of negotiable certificates of deposit in the United States, Hong Kong, the United Kingdom, and Australia and the issuance of commercial paper in the United States. The Bank operates longer-term wholesale debt issuance registered programs in the United States, such as its SEC Registered Debt and Equity Shelf, and non-registered programs, such as the securitization of retail indirect auto loan receivables through the Securitized Term Auto Receivables Trust program and the securitization of retail credit card receivables through the Trillium Credit Card Trust II program. The Bank's Covered Bond Program is listed with the U.K. Listing Authority, and the Bank may issue under the program in Europe, the United States, Australia and Switzerland. The Bank also raises longer-term funding across a variety of currencies through its Australian Medium Term Note Programme, European Medium Term Note Programme and Singapore Medium Term Note Programme. The Bank's European Medium Term Note Programme is listed with the U.K. Listing Authority, Swiss Stock Exchange and the Tokyo Pro-Bond Market. The Bank's Singapore Medium Term Note Programme is listed with the Singapore Exchange and the Taiwan Exchange.

On September 23, 2018, the Bank Recapitalization (Bail-in) Conversion Regulations and the Bank Recapitalization (Bail-in) Issuance Regulations came into force. In general, any issuance of senior debt with an initial or amended term to maturity (including explicit or embedded options) greater than 400 days, that is unsecured or partially secured and has been assigned a CUSIP or ISIN or similar identification number is subject, in whole or in part, to conversion into the Bank's common shares. Please refer to the "Regulatory Developments" section.

MANAGEMENT'S DISCUSSION AND ANALYSIS

The table below provides the remaining contractual maturities of funding raised through wholesale funding. In the Consolidated Statement of Financial Position, these liabilities are primarily included in Business & Government Deposits.

**T52 Wholesale funding<sup>(1)</sup>**

As at October 31, 2018 (\$ millions)	Less than 1 month	1-3 months	3-6 months	6-9 months	9-12 months	Sub-Total < 1 Year	1-2 years	2-5 years	>5 years	Total
Deposits from banks <sup>(2)</sup>	\$ 1,720	\$ 196	\$ 211	\$ 212	\$ 116	\$ 2,455	\$ 29	\$ 145	\$ 32	\$ 2,661
Bearer deposit notes, commercial paper and short-term certificate of deposits	8,807	14,201	21,517	15,961	7,580	68,066	5,487	666	56	74,275
Asset-backed commercial paper <sup>(3)</sup>	2,088	4,697	165	–	–	6,950	–	–	–	6,950
Senior notes <sup>(4)(5)</sup>	180	2,714	4,070	6,214	5,168	18,346	15,179	36,765	14,298	84,588
Bail-inable notes <sup>(5)</sup>	–	–	–	–	–	–	–	–	–	–
Asset-backed securities	6	15	47	500	–	568	2,714	1,944	304	5,530
Covered bonds	–	2,910	1,491	–	1,975	6,376	4,312	16,779	1,772	29,239
Mortgage securitization <sup>(6)</sup>	–	765	316	567	508	2,156	2,388	12,966	4,646	22,156
Subordinated debentures <sup>(7)</sup>	–	–	–	–	–	–	–	237	7,539	7,776
<b>Total wholesale funding sources</b>	<b>\$ 12,801</b>	<b>\$ 25,498</b>	<b>\$ 27,817</b>	<b>\$ 23,454</b>	<b>\$ 15,347</b>	<b>\$ 104,917</b>	<b>\$ 30,109</b>	<b>\$ 69,502</b>	<b>\$ 28,647</b>	<b>\$ 233,175</b>
<i>Of Which:</i>										
Unsecured funding	\$ 10,707	\$ 17,111	\$ 25,798	\$ 22,387	\$ 12,864	\$ 88,867	\$ 20,695	\$ 37,813	\$ 21,925	\$ 169,300
Secured funding	2,094	8,387	2,019	1,067	2,483	16,050	9,414	31,689	6,722	63,875

As at October 31, 2017 (\$ millions)	Less than 1 month	1-3 months	3-6 months	6-9 months	9-12 months	Sub-Total < 1 Year	1-2 years	2-5 years	>5 years	Total
Deposits from banks <sup>(2)</sup>	\$ 2,740	\$ 471	\$ 405	\$ 264	\$ 110	\$ 3,990	\$ 205	\$ 153	\$ –	\$ 4,348
Bearer deposit notes, commercial paper and short-term certificate of deposits	7,699	12,227	22,351	12,740	7,557	62,574	5,685	495	12	68,766
Asset-backed commercial paper <sup>(3)</sup>	1,885	4,233	981	–	–	7,099	–	–	–	7,099
Senior notes <sup>(4)(5)</sup>	24	3,621	8,480	5,469	6,378	23,972	13,024	32,927	10,453	80,376
Asset-backed securities	–	1	–	1,162	215	1,378	822	1,975	351	4,526
Covered bonds	2,821	–	–	13	686	3,520	6,378	14,719	1,410	26,027
Mortgage securitization <sup>(6)</sup>	–	569	666	556	310	2,101	2,158	10,522	4,943	19,724
Subordinated debentures <sup>(7)</sup>	–	–	–	–	–	–	–	181	7,022	7,203
<b>Total wholesale funding sources</b>	<b>\$ 15,169</b>	<b>\$ 21,122</b>	<b>\$ 32,883</b>	<b>\$ 20,204</b>	<b>\$ 15,256</b>	<b>\$ 104,634</b>	<b>\$ 28,272</b>	<b>\$ 60,972</b>	<b>\$ 24,191</b>	<b>\$ 218,069</b>
<i>Of Which:</i>										
Unsecured funding	\$ 10,463	\$ 16,319	\$ 31,236	\$ 18,474	\$ 14,045	\$ 90,537	\$ 18,914	\$ 33,755	\$ 17,487	\$ 160,693
Secured funding	4,706	4,803	1,647	1,730	1,211	14,097	9,358	27,217	6,704	57,376

(1) Wholesale funding sources exclude repo transactions and bankers acceptances, which are disclosed in the T56 Contractual maturities. Amounts are based on remaining term to maturity.

(2) Only includes commercial bank deposits raised by Group Treasury.

(3) Wholesale funding sources also exclude asset-backed commercial paper issued by certain ABCP conduits that are not consolidated for financial reporting purposes.

(4) Not subject to bail-in.

(5) Includes Structured notes issued to institutional investors.

(6) Represents residential mortgages funded through Canadian Federal Government agency sponsored programs. Funding accessed through such programs does not impact the funding capacity of the Bank in its own name.

(7) Although subordinated debentures are a component of regulatory capital, they are included in this table in accordance with EDTF recommended disclosures.

Wholesale funding generally bears a higher risk of run-off in a stressed environment than other sources of funding. The Bank mitigates this risk through funding diversification, ongoing engagement with investors and by maintaining a large holding of unencumbered liquid assets. Unencumbered liquid assets of \$202 billion as at October 31, 2018 (October 31, 2017 – \$180 billion) were well in excess of wholesale funding sources that mature in the next twelve months.

### Contractual maturities and obligations

The table below provides the maturity of assets and liabilities as well as the off-balance sheet commitments as at October 31, 2018, based on the contractual maturity date.

From a liquidity risk perspective the Bank considers factors other than contractual maturity in the assessment of liquid assets or in determining expected future cash flows. In particular, for securities with a fixed maturity date, the ability and time horizon to raise cash from these securities is more relevant to liquidity management than contractual maturity. For other assets and deposits the Bank uses assumptions about rollover rates to assess liquidity risk for normal course and stress scenarios. Similarly, the Bank uses assumptions to assess the potential drawdown of credit commitments in various scenarios.

The Bank's contractual obligations include contracts and purchase obligations, including agreements to purchase goods and services that are enforceable, legally binding on the Bank and affect the Bank's liquidity and capital resource needs. The Bank leases a large number of its branches, offices and other locations. The majority of these leases are for a term of five years, with options to renew. The total cost of these leases, net of rental income from subleases, was \$477 million in 2018 (2017 – \$444 million). The increase primarily reflects higher contractual rents, the impact of branch and office sale/leasebacks and acquisitions of BBVA Chile and Citibank Colombia.

**T53** Contractual maturities

As at October 31, 2018

(\$ millions)	Less than one month	One to three months	Three to six months	Six to nine months	Nine to twelve months	One to two years	Two to five years	Over five years	No specific maturity	Total
<b>Assets</b>										
Cash and deposits with financial institutions and precious metals	\$ 54,254	\$ 920	\$ 284	\$ 101	\$ 117	\$ 326	\$ 726	\$ 223	\$ 8,509	\$ 65,460
Trading assets	4,792	5,311	3,326	5,463	2,309	7,934	12,765	18,130	40,232	100,262
Financial instruments designated at fair value through profit or loss	–	–	–	–	12	–	–	–	–	12
Securities purchased under resale agreement and securities borrowed	74,522	21,223	5,743	673	337	549	539	432	–	104,018
Derivative financial instruments	3,178	5,517	2,024	2,327	1,446	6,447	6,071	10,548	–	37,558
Investment securities – FVOCI	3,925	6,436	5,852	3,284	3,243	13,139	15,206	4,758	1,305	57,148
Investment securities – amortized cost	452	1,429	1,160	1,501	1,500	4,302	9,465	934	–	20,743
Investment securities – FVTPL	–	–	–	–	–	–	–	–	505	505
Loans	40,463	27,581	28,920	27,246	28,064	93,191	214,017	34,985	57,367	551,834
Residential mortgages	11,496	4,697	8,774	12,014	12,781	53,629	126,934	21,366	1,666 <sup>(1)</sup>	253,357
Personal loans	4,204	2,701	3,528	3,431	3,558	11,712	23,338	5,468	38,079	96,019
Credit cards	–	–	–	–	–	–	–	–	16,485	16,485
Business and government	24,763	20,183	16,618	11,801	11,725	27,850	63,745	8,151	6,202 <sup>(2)</sup>	191,038
Allowance for credit losses	–	–	–	–	–	–	–	–	(5,065)	(5,065)
Customers' liabilities under acceptances	13,829	2,082	338	50	30	–	–	–	–	16,329
Other assets	–	–	–	–	–	–	–	–	44,624	44,624
Total assets	195,415	70,499	47,647	40,645	37,058	125,888	258,789	70,010	152,542	998,493
<b>Liabilities and equity</b>										
Deposits	\$ 56,965	\$53,331	\$ 48,661	\$ 39,716	\$ 32,753	\$ 45,262	\$ 78,295	\$18,313	\$303,238	\$ 676,534
Personal	8,797	9,415	12,536	9,563	10,241	13,472	11,953	261	138,307	214,545
Non-personal	48,168	43,916	36,125	30,153	22,512	31,790	66,342	18,052	164,931	461,989
Financial instruments designated at fair value through profit or loss	22	77	360	410	523	3,090	1,646	1,969	91	8,188
Acceptances	13,838	2,082	338	50	30	–	–	–	–	16,338
Obligations related to securities sold short	910	972	870	305	1,013	3,896	8,685	7,388	8,048	32,087
Derivative financial instruments	2,520	4,288	1,613	2,716	1,583	6,773	7,699	10,775	–	37,967
Obligations related to securities sold under repurchase agreements and securities lent	96,157	3,466	1,634	–	–	–	–	–	–	101,257
Subordinated debentures	–	–	–	–	–	–	–	5,698	–	5,698
Other liabilities	2,720	592	1,302	422	757	1,784	6,167	5,978	33,022	52,744
Total equity	–	–	–	–	–	–	–	–	67,680	67,680
Total liabilities and equity	173,132	64,808	54,778	43,619	36,659	60,805	102,492	50,121	412,079	998,493
<b>Off-Balance sheet commitments</b>										
Operating leases	\$ 36	\$ 72	\$ 106	\$ 104	\$ 102	\$ 378	\$ 818	\$ 880	\$ –	\$ 2,496
Credit commitments <sup>(3)</sup>	4,232	5,588	13,438	15,182	22,619	23,906	105,988	6,486	–	197,439
Financial guarantees <sup>(4)</sup>	–	–	–	–	–	–	–	–	36,423	36,423
Outsourcing obligations <sup>(5)</sup>	18	36	52	52	52	207	311	–	1	729

(1) Includes primarily impaired mortgages.

(2) Includes primarily overdrafts and impaired loans.

(3) Includes the undrawn component of committed credit and liquidity facilities.

(4) Includes outstanding balances of guarantees, standby letters of credit and commercial letters of credit which may expire undrawn.

(5) The Bank relies on outsourcing arrangements for certain support and/or business functions, including, but not limited to, computer operations and cheque and bill payment processing. Outsourcing partners include, among others, IBM Canada and Symcor Inc.

As at October 31, 2017

(\$ millions)	Less than one month	One to three months	Three to six months	Six to nine months	Nine to twelve months	One to two years	Two to five years	Over five years	No specific maturity	Total
<b>Assets</b>										
Cash and deposits with financial institutions and precious metals	\$ 51,646	\$ 894	\$ 395	\$ 175	\$ 159	\$ 396	\$ 514	\$ 290	\$ 10,911	\$ 65,380
Trading assets	5,484	5,106	3,275	2,740	2,224	5,272	14,816	17,776	41,771	98,464
Financial instruments designated at fair value through profit or loss	–	–	–	–	–	13	–	–	–	13
Securities purchased under resale agreement and securities borrowed	73,346	16,966	3,732	1,087	188	–	–	–	–	95,319
Derivative financial instruments	3,544	4,558	2,084	1,418	1,274	4,303	8,375	9,808	–	35,364
Investment securities – available-for-sale	3,094	5,645	4,495	2,170	2,131	6,506	18,098	7,054	1,311	50,504
Investment securities – held-to-maturity	739	779	1,052	1,193	123	5,847	8,923	109	–	18,765
Loans	28,840	25,032	28,778	29,291	27,197	74,303	209,229	28,667	53,032	504,369
Residential mortgages	3,072	4,065	9,542	15,700	13,083	42,460	129,448	18,017	1,529 <sup>(1)</sup>	236,916
Personal loans	3,980	2,309	3,124	3,322	3,217	10,899	20,601	5,293	36,482	89,227
Credit cards	–	–	–	–	–	–	–	–	14,104	14,104
Business and government	21,788	18,658	16,112	10,269	10,897	20,944	59,180	5,357	5,244 <sup>(2)</sup>	168,449
Allowance for credit losses	–	–	–	–	–	–	–	–	(4,327)	(4,327)
Customers' liabilities under acceptances	10,875	2,399	254	22	10	–	–	–	–	13,560
Other assets	–	–	–	–	–	–	–	–	33,535	33,535
Total assets	177,568	61,379	44,065	38,096	33,306	96,640	259,955	63,704	140,560	915,273
<b>Liabilities and equity</b>										
Deposits	\$ 56,154	\$ 48,037	\$ 49,107	\$ 30,938	\$ 26,373	\$ 44,735	\$ 73,099	\$ 16,037	\$ 280,887	\$ 625,367
Personal	7,058	7,247	8,500	7,840	7,862	13,223	13,741	393	134,166	200,030
Non-personal	49,096	40,790	40,607	23,098	18,511	31,512	59,358	15,644	146,721	425,337
Financial instruments designated at fair value through profit or loss	–	3	5	118	133	543	2,882	979	–	4,663
Acceptances	10,875	2,399	254	22	10	–	–	–	–	13,560
Obligations related to securities sold short	336	167	97	148	1,057	3,354	9,229	9,935	6,443	30,766
Derivative financial instruments	2,810	3,348	1,786	1,258	1,347	3,056	11,534	9,061	–	34,200
Obligations related to securities sold under repurchase agreements and securities lent	85,636	8,452	1,524	229	2	–	–	–	–	95,843
Subordinated debentures	–	–	–	–	–	–	–	5,935	–	5,935
Other liabilities	1,419	1,076	440	824	187	1,369	3,223	4,314	30,462	43,314
Total equity	–	–	–	–	–	–	–	–	61,625	61,625
Total liabilities and equity	157,230	63,482	53,213	33,537	29,109	53,057	99,967	46,261	379,417	915,273
<b>Off-Balance sheet commitments</b>										
Operating leases	\$ 30	\$ 60	\$ 88	\$ 87	\$ 84	\$ 311	\$ 656	\$ 593	\$ –	\$ 1,909
Credit commitments <sup>(3)</sup>	4,661	5,913	12,862	18,293	17,254	24,091	97,773	4,819	–	185,666
Financial guarantees <sup>(4)</sup>	–	–	–	–	–	–	–	–	36,344	36,344
Outsourcing obligations <sup>(5)</sup>	19	37	54	53	53	207	517	–	1	941

(1) Includes primarily impaired mortgages.

(2) Includes primarily overdrafts and impaired loans.

(3) Includes the undrawn component of committed credit and liquidity facilities.

(4) Includes outstanding balances of guarantees, standby letters of credit and commercial letters of credit which may expire undrawn.

(5) The Bank relies on outsourcing arrangements for certain support and/or business functions, including, but not limited to, computer operations and cheque and bill payment processing. Outsourcing partners include, among others, IBM Canada and Symcor Inc.

## Other Risks

### Operational Risk

Operational risk is the risk of loss, resulting from people, inadequate or failed processes and systems, or from external events. Operational risk includes legal risk but excludes strategic risk and reputational risk. Operational risk in some form exists in each of the Bank's businesses and support activities and can result in financial loss, regulatory sanctions and damage to the Bank's reputation. Operational risk is inherent in all our activities, including the practices and controls used to manage other risks. Failure to manage operational risk can result in direct or indirect financial loss, but also in regulatory sanctions and reputational impact.

#### Governance and organization

The Bank's Operational Risk Management Framework sets out an integrated approach to identify, assess, control, mitigate and report operational risks across the Bank. The following are key components of the Bank's Operational Risk Management Framework:

- The Bank's Risk and Control Self-Assessment program, which includes formal reviews of significant units, operations and processes to identify and assess operational risks. This program provides a basis for management to ensure that key risks have been identified and that controls are functioning effectively. Business line management attests to the accuracy of each assessment and develops action plans to mitigate residual risk exposure, as appropriate.
- The Bank's scenario analysis program provides a forward looking view of key risks and provides management with insights into how plausible but highly unlikely operational risk events might occur. Scenario analysis will also assist in the selection of severity distributions in the Bank's Advanced Measurement Approach (AMA) capital model (discussed below).
- The Bank's Key Risk Indicator (KRI) program provides information on the level of exposure to a given operational risk at a particular point in time and can help to monitor potential shifts in risk conditions or new emerging risks and/or measure residual risk exposure and effectiveness of controls.
- The Business Environment and Internal Control Factors (BEICF) program incorporates the impact of key business environment and internal control factors into the regulatory capital allocated to divisions by utilizing a BEICF scorecard. The scorecard is used to adjust capital calculations produced using the Bank's AMA capital model and due to its forward-looking nature, it also assists with identifying new trends and emerging risks.
- The Bank's New Initiatives Risk Management Policy which describes the general principles applicable to the review, approval and implementation of new products and services within Scotiabank and is intended to provide overarching guidance.
- The Bank's centralized operational loss event database, which captures key information on operational losses and near-misses.
- The Bank's monitoring of industry events, which identifies significant losses incurred at other financial institutions and provides a reference for reviewing and assessing the Bank's own risk exposure.
- The Bank's training programs, including the mandatory Anti-Money Laundering, Operational Risk and Information Security courses and examinations which work to ensure employees are aware of relevant risks and are equipped to safeguard our customers' and the Bank's assets.
- Operational risk reporting is provided to the Bank's senior executive management and the Board of Directors, and includes information relating to key events, results, trends and themes across the operational risk tools. The combination of these information sources provides both a backward and forward-looking view of operational risk at the Bank.

#### Operational risk capital

There are two methods for the calculation of operational risk regulatory capital available to the Bank under the Basel framework – The Standardized Approach and the Advanced Measurement Approach (AMA). In 2016, OSFI approved our application to use the Advanced Measurement Approach (AMA) for operational risk, subject to a capital floor. In 2017, we formally began utilizing AMA to report regulatory capital.

### Information Technology (IT) & Cybersecurity Risk

IT Risk refers to the likelihood of failures or deficiencies related to the IT environment that may result in loss or other negative impact to the Bank. IT risk is the business risk associated with the use, ownership, operation, involvement, influence and adoption of IT within an enterprise. Cybersecurity risk is a sub-discipline of IT risk, and refers to the protection of information assets by addressing threats to information processed, stored, and transported by internetworked information systems. IT & Cybersecurity risk consists of information technology related events (e.g., cybersecurity incidents, outages) that could potentially have an adverse impact on our business. Such events could result in business interruption, service disruptions, theft of intellectual property and confidential information, additional regulatory scrutiny, litigation and reputational damage.

IT and Cyber Security risks continue to evolve across the financial industry. The increasing use of online delivery channels and mobile devices to perform financial transactions leave the bank vulnerable to operational disruptions due to multiple factors such as: human errors, frauds, infrastructure failures, issues with our business partners, among others. Those events may increase costs or may negatively impact the Bank's operational environment, our customers and other third parties. Regulatory oversight of IT and Cyber Security risk management practices has also been increased.

The Board of Directors approves the IT Risk Management and Information Security policies, which along with the respective frameworks are focused on safeguarding the Bank's and its customers information, ensuring the Bank's IT environment is reliable, secure, resilient and robust in supporting our business objectives.

Significant efforts are directed on risk management activities including the Cyber Security program in line with the industry standards and best practices. The Bank is expanding its capabilities to defend against potential threats and minimize the impact to the business, including the regular testing activities to continuously reinforce the Bank's resilience to events caused by factors out of the Bank's control. The dependency on third parties and the potential risks they bring to the continuity of our business activities is a key area of focus. The Bank has a governance framework to mitigate those risks.

The Bank continuously monitors the metrics and Key Risk Indicators, which are regularly reported to the Board of Directors, its Risk Committee and other internal committees who oversee the performance of the associated risk thresholds. Material issues are escalated to the executive management committees to ensure appropriate remediation. Information security awareness campaigns are conducted periodically, including annual mandatory training sessions on information security and operational risk to all our employees, reinforcing our risk culture.

## Compliance Risk

Compliance Risk is the risk that a business activity may not be conducted in conformity with applicable Regulations, internal policies and procedures and ethical standards expected by regulators, customers, investors, employees and other stakeholders. "Regulations" means all Governmental Acts, laws, rules, regulations, regulatory guidelines and industry or self-regulatory organizational codes of conduct, rules and by-laws.

The Bank conducts business in many jurisdictions around the world and provides a wide variety of financial products and services through its various lines of business and operations. It is subject to, and must comply with, many and changing Regulations by governmental agencies, supervisory authorities and self-regulatory organizations in all the jurisdictions in which the Bank operates. The regulatory bar is constantly rising with Regulations being more vigorously enforced and new Regulations being enacted. The bar of public expectations is also constantly rising. Regulators and customers expect the Bank and its employees will operate its business in compliance with applicable laws and will refrain from unethical practices.

Compliance risk is managed on an enterprise-wide basis throughout the Bank via the operation of the Scotiabank Compliance Program ("the Program") which includes the appointment of a Chief Compliance Officer (CCO) for the Bank and is responsible for overseeing Compliance Risk Management within the Bank. The CCO is responsible for assessing the adequacy of, adherence to and effectiveness of the Program, as well as for the development and application of written compliance policies and procedures that are kept up to date and approved by senior management, assessing and documenting compliance risks, developing and maintaining a written compliance training program, which in each case is performed either directly or indirectly by other departments within the Bank in coordination with Global Compliance. This program and these ancillary activities are subject to Internal Audit's periodic review to assess the effectiveness of the Program.

The Board-approved Scotiabank Compliance Policy describes the general policies and principles applicable to compliance risk management within Scotiabank and encompasses the Bank's Regulatory Compliance Management framework as contemplated by OSFI Guideline E-13. The Compliance Policy is an integral part of the enterprise-wide policies and procedures that collectively articulate the Bank's governance and control structure. Other more specifically focused compliance risk management policies and procedures may be developed within the framework established by the Compliance Policy where necessary or appropriate.

## Money Laundering & Terrorist Financing Risk

Money Laundering & Terrorist Financing (ML/TF) risk is the susceptibility of Scotiabank to be used by individuals or organizations to launder the proceeds of crime, finance terrorism, or violate economic sanctions. It also includes the risk that Scotiabank does not conform to applicable Anti-Money Laundering ("AML") / Anti-Terrorist Financing ("ATF") or sanctions legislation, or does not apply adequate controls reasonably designed to deter and detect ML/TF and sanctions violations or to file any required regulatory reports.

Money laundering, terrorist financing, and sanctions risks are managed throughout the Bank via the operation of the Bank's AML/ATF and Sanctions program ("the Program") which includes the appointment of a Chief Anti-Money Laundering Officer responsible for the Program, development and application of written compliance policies and procedures that are kept up to date and approved by senior management, assessing and documenting the risk of money laundering, terrorist-financing or sanctions violations, developing and maintaining a written ongoing compliance training program, and regular review of the effectiveness of the Program conducted by Internal Audit. The Chief Anti-Money Laundering Officer has unfettered access to, and direct communication with, Executive Management of the Bank and its Board.

In providing financial services to its customers, the Bank conducts Customer Due Diligence sufficient to form a reasonable belief that it knows the true identity of its customers, including in the case of an entity customer its material beneficial owners. The Bank will not maintain anonymous accounts, nor will it maintain accounts for shell Banks. Consistent with a risk-based approach, the Bank assesses the risks of its customers and, where appropriate, conducts enhanced due diligence on those who are considered higher risk. The Bank also conducts ongoing risk-based monitoring of its customers to detect and report suspicious transactions, and conducts customer and transaction screening against terrorist, sanctions, and other designated watch-lists. All active employees are provided with mandatory AML/ATF training on an annual basis.

The Bank's business units conduct an annual self-assessment of their ML/TF risks, as well as self-assessments of their control measures designed to manage such risks. The process is overseen by the Bank's Global AML/ATF Unit and the results shared with the Bank's Senior Management and its Board.

## Reputational Risk

Reputational risk is the risk that negative publicity regarding Scotiabank's conduct, business practices or associations, whether true or not, will adversely affect its revenues, operations or customer base, or require costly litigation or other defensive measures.

Negative publicity about an institution's business practices may involve any aspect of its operations, but usually relates to questions of business ethics and integrity, or quality of products and services. Negative publicity and attendant reputational risk frequently arise as a by-product of some other kind of risk management control failure.

Reputational risk is managed and controlled throughout the Bank by codes of conduct, governance practices and risk management programs, policies, procedures and training. Many relevant checks and balances are outlined in greater detail under other risk management sections, particularly Operational Risk, where reference is made to the Bank's well-established compliance program. All directors, officers and employees have a responsibility to conduct their activities in accordance with the Scotiabank's Code of Conduct, and in a manner that minimizes reputational risk. While all employees, officers and directors are expected to protect the reputation of Scotiabank by complying with the Scotiabank's Code of Conduct, the activities of the Legal, Global Tax, Corporate Secretary, Global Communications, Global AML/ATF, Global Compliance and Global Risk Management departments, and the Reputational Risk Committee, are particularly oriented to the management of reputational risk.

In providing credit, advice, or products to customers, or entering into associations, the Bank considers whether the transaction, relationship or association might give rise to reputational risk. The Bank has a Reputational Risk Policy, as well as policy and procedures for managing reputational and legal risk related to structured finance transactions. Global Risk Management plays a significant role in the identification and management of reputational risk related to credit underwriting. In addition, the Reputational Risk Committee is available to support Global Risk Management, as well as other risk management committees and business units, with their assessment of reputational risk associated with transactions, business initiatives, new products and services and sales practice issues.

The Reputational Risk Committee considers a broad array of factors when assessing transactions, so that the Bank meets, and will be seen to meet, high ethical standards. These factors include the extent, and outcome, of legal and regulatory due diligence pertinent to the transaction; the economic intent of the transaction; the effect of the transaction on the transparency of a customer's financial reporting; the need for customer or public disclosure; conflicts of interest; fairness issues; and public perception. The Reputational Risk Committee also holds regular quarterly meetings to review activities in the quarter, review metrics and discuss any emerging trends or themes.

The Reputational Risk Committee may impose conditions on customer transactions, including customer disclosure requirements to promote transparency in financial reporting, so that transactions meet Bank standards. In the event the Committee recommends not proceeding with a transaction and the sponsor of the transaction wishes to proceed, the transaction is referred to the Risk Policy Committee.

## Environmental Risk

**Environmental risk refers to the possibility that environmental concerns involving Scotiabank or its customers could affect the Bank's performance.**

To safeguard the Bank and the interests of its stakeholders, Scotiabank has an environmental policy, which is approved by the Bank's Board of Directors. The policy guides day-to-day operations, lending practices, supplier agreements, the management of real estate holdings and external reporting practices. It is supplemented by specific policies and practices relating to individual business lines.

Environmental risks associated with the business operations of each borrower and any real property offered as security are considered in the Bank's credit evaluation procedures. This includes an environmental risk assessment where applicable, and commentary on the potential impact of climate change (including physical or transition risk impacts) on the borrower. Global Risk Management has primary responsibility for establishing the related policies, processes and standards associated with mitigating environmental risk in the Bank's lending activities. Decisions are taken in the context of the risk management framework.

In the area of project finance, the Equator Principles have been integrated into the Bank's internal processes and procedures since 2006. The Equator Principles help financial institutions determine, assess, manage and report environmental and social risk. The principles apply to project finance loans and advisory assignments where total capital costs exceed US\$10 million, and to certain project-related corporate loans. The Equator Principles provide safeguards for sensitive projects to ensure protection of natural habitats and the rights of indigenous peoples, as well as safeguards against the use of child and forced labour.

The Bank's Environmental Policy plays a prominent role in guiding the reduction of the Bank's environmental footprint. The Real Estate Department adheres to an Environmental Compliance Policy to ensure responsible management of the Bank's real estate holdings from an environmental perspective. In addition, a variety of reduction measures are in place for energy, paper and waste in the Bank's corporate offices and branch networks. Internal tracking systems are in place with respect to energy use, greenhouse gas emissions (GHG) and paper consumption. Since 2012, GHG emissions data for the branch network and corporate offices has been externally verified.

To continue operations in an environmentally responsible manner, the Bank monitors policy and legislative requirements through ongoing dialogue with government, industry and stakeholders in countries where it operates. Scotiabank has been meeting with environmental organizations, industry associations and socially responsible investment organizations with respect to the role that banks can play to help address issues such as climate change, protection of biodiversity, promotion of sustainable forestry practices, implementing the recommendations of the Task Force on Climate-related Financial Disclosure, and other environmental issues important to its customers and communities where it operates. The Bank has an ongoing process of reviewing its practices in these areas.

Scotiabank has a number of environmentally focused products and services, including: an EcoEnergy Financing program designed to support personal and small business customers who wish to install small-scale renewable energy projects; and an auto loan product for hybrid, electric and clean diesel vehicles. As well, Scotiabank has the Commodities Derivatives group, which assists corporate clients by providing liquidity and hedge solutions in the carbon market.

### Environmental Reporting

Scotiabank is also a signatory to, and participant in the Carbon Disclosure Project, which provides corporate disclosure to the investment community on greenhouse gas emissions and climate change management. Further information is available in the Bank's annual Corporate Social Responsibility Report.

## Insurance Risk

**The Bank is both a distributor of third party insurance products and underwriter of insurance risk. As a distributor of third party insurance products, the Bank earns fees but bears no insurance risk. The Bank bears insurance risk in its role as an underwriter, either through direct underwriting or via reinsurance.**

**Insurance risk is the risk of potential financial loss due to actual experience being different from that assumed in the pricing process of the insurance products.**

Insurance by nature involves the distribution of products that transfer individual risks to the issuer with the expectation of a return built into the insurance premiums earned. The Bank is exposed to insurance risk primarily through its creditor, life and select property and casualty insurance and reinsurance products.

The insurance governance and risk management frameworks are calibrated within each insurance subsidiary commensurate with the nature and materiality of risk assumed. Senior management within the insurance business subsidiaries has primary responsibility for managing insurance risk through their risk committees. Typical committee members include the Chief Executive Officer, Chief Financial Officer and Chief Risk Officer. Second line of defense oversight is provided by Global Risk Management – Insurance Risk. The insurance subsidiaries have their own boards of directors, as well as independent appointed actuaries who provide actuarial management oversight.

The insurance subsidiaries maintain a number of policies and practices to manage insurance risk. Sound product design is an essential element. The vast majority of risks insured are short-term in nature, that is, they do not involve long-term pricing guarantees. Geographic diversification and product-line diversification are important elements as well. Reinsurance is commonly used as an effective tool to manage the insurance risk exposures. Insurance risk is also managed through effective underwriting and claim adjudication practices, ongoing monitoring of experience, and stress-testing scenario analysis.

## Strategic Risk

Strategic risk is the risk that the enterprise, business lines or corporate functions will make strategic choices that are ineffective or insufficiently resilient to changes in the business environment, or poorly execute such strategies.

---

The Board of Directors is ultimately responsible for oversight of strategic risk, by adopting a strategic planning process and approving, on an annual basis, a strategic plan for the Bank.

The Bank manages its strategic planning process through a series of coordinated efforts between the Executive Management Team, the Business Lines and the Corporate Functions. These efforts address a wide range of relevant considerations including capital and resource allocation, business initiatives, strategic transactions and investments, stress testing and alignment with the Bank's Risk Appetite Framework. These considerations are reviewed in a consistent and disciplined manner. The process involves input from the entire Executive Management Team and from the Board of Directors.

On an annual basis, a comprehensive update on the Strategic Agenda is prepared that summarizes the Bank's key strategic considerations, and is presented by the President and Chief Executive Officer to the Board of Directors for their review and approval.

The execution and evaluation of strategic plans within the Bank is critically important to the Bank's enterprise-wide risk management framework. The Bank makes continuous efforts to ensure that all employees are aware of the Bank's overall strategic direction, and that employees are also aware of the strategies and objectives for their respective business line or corporate function. On an ongoing basis, the business lines and corporate functions identify, manage and assess the internal and external considerations – including risk factors – that could affect the achievement of their strategic objectives. These matters are considered on an enterprise-wide basis by the Bank's Executive Management Team, which makes adjustments, as required.

## Data Risk

Data risk is the risk, whether direct or indirect, to data that is used to support the Bank's ability to make informed decisions and develop accurate reporting and analytics for the Bank, including the Board, senior management and regulators, or for customer facing and/or marketing purposes. Risks to which the Bank is exposed include data management, data taxonomy, metadata, breaches or data that is incomplete, inaccurate, invalid, untimely and/or inaccessible.

---

Data is considered one of the Bank's most strategic assets and the volume, value and type of data found within the Bank has exponentially increased in recent years. Enhanced rigor towards data management is a concentrated focus for the Bank with the increase in regulatory demands. The Data Executive Committee approves the Data Management Policy and Governance Framework. The goals of the policy and framework are to ensure oversight and management of critical Bank-wide data, and to provide governance, oversight, control structure and accountabilities to enable greater enterprise coordination and consistency.

The Data Office oversees and standardizes data management and data governance practices in establishing reliable, reusable and scalable data and is responsible for enterprise-wide management of data risk. Since data is produced and consumed by different business lines and geographies across the Bank, an effective, collaborative and holistic approach to data risk management is required to minimize reputational, regulatory and financial risk.

## CONTROLS AND ACCOUNTING POLICIES

### Controls and Procedures

Management's responsibility for financial information contained in this annual report is described on page 140.

#### Disclosure controls and procedures

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

As of October 31, 2018, the Bank's management, with the participation of the President and Chief Executive Officer and the Executive Vice President and Chief Financial Officer, evaluated the effectiveness of its disclosure controls and procedures, as defined under the rules adopted by the U.S. Securities and Exchange Commission (SEC) and the Canadian securities regulatory authorities, and have concluded that the Bank's disclosure controls and procedures are effective.

#### Internal control over financial reporting

Management of the Bank is responsible for establishing and maintaining adequate internal control over financial reporting. These controls include policies and procedures that:

- pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Bank;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB), and that receipts and expenditures are being made only in accordance with authorizations of management and directors of the Bank; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Bank's assets that could have a material effect on the financial statements.

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

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

#### Changes in internal control over financial reporting

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

### Critical Accounting Estimates

The Bank's accounting policies are integral to understanding and interpreting the financial results reported in this annual report. Note 3 to the consolidated financial statements, summarizes the significant accounting policies used in preparing the Bank's consolidated financial statements. Certain of these policies require management to make estimates, assumptions and subjective judgements that are difficult, complex, and often relate to matters that are inherently uncertain. The policies discussed below are considered to be particularly important to the presentation of the Bank's financial position and results of operations, because changes in the estimates, assumptions and judgements could have a material impact on the Bank's consolidated financial statements. These estimates, assumptions and judgements are adjusted in the normal course of business to reflect changing underlying circumstances.

#### Allowance for credit losses

Effective in 2018, the allowance for credit losses, using an expected credit loss approach as required under IFRS 9, is estimated using complex models and incorporates inputs, assumptions and techniques that involve a high degree of management judgment. Under IFRS 9 expected credit loss methodology, an allowance is recorded for expected credit losses on financial assets regardless of whether there has been an actual loss event. The Bank recognizes an allowance at an amount equal to 12 month expected credit losses, if the credit risk at the reporting date has not increased significantly since initial recognition (Stage 1). When a financial asset experiences a significant increase in credit risk subsequent to origination but is not considered to be in default, it is included in Stage 2 and subject to lifetime expected credit losses. Financial assets that are in default are included in Stage 3. Similar to Stage 2, the allowance for credit losses for Stage 3 financial assets captures the lifetime expected credit losses.

The main drivers in allowance for credit loss changes that are subject to significant judgment include the following:

- Determination of point-in-time parameters such as probability of default (PD), loss given default (LGD) and exposure at default (EAD).
- Forecast of macroeconomic variables for multiple scenarios and probability weighting of the scenarios.
- Assessment of significant increase in credit risk.

#### Measurement of expected credit losses

The probability of default (PD), exposure at default (EAD), and loss given default (LGD) inputs used to estimate expected credit losses are modelled based on macroeconomic variables that are most closely related with credit losses in the relevant portfolio.

Details of these statistical parameters/inputs are as follows:

- PD – The probability of default is an estimate of the likelihood of default over a given time horizon. A default may only happen at a certain time over the remaining estimated life, if the facility has not been previously derecognized and is still in the portfolio.

- EAD – The exposure at default is an estimate of the exposure at a future default date, taking into account expected changes in the exposure after the reporting date, including repayments of principal and interest, whether scheduled by contract or otherwise, expected drawdowns on committed facilities, and accrued interest from missed payments.
- LGD – The loss given default is an estimate of the loss arising in the case where a default occurs at a given time. It is based on the difference between the contractual cash flows due and those that the lender would expect to receive, including from the realization of any collateral. It is usually expressed as a percentage of the EAD.

#### *Forward-looking macroeconomic scenarios*

The Bank uses a broad range of forward-looking economic information as inputs to its models of expected credit losses and the related allowance. These include real GDP, unemployment rates, central-bank interest rates, and house-price indices. The allowance is determined using three probability-weighted, forward-looking scenarios. The Bank considers both internal and external sources of information and data in order to create unbiased projections and forecasts. The Bank prepares the scenarios using forecasts generated by Scotiabank Economics (SE). The forecasts are generated using both internally and externally developed models whose outputs are modified by SE as necessary to formulate a 'base case' view of the most probable future direction of economic developments; SE also develops a representative range of other alternative possible forecast scenarios. More specifically, the process involves the development of two additional economic scenarios to which relative probabilities are assigned. The development of the baseline and alternative scenarios is overseen by a governance committee that consists of internal stakeholders from across the bank. The final baseline and alternative scenarios reflect significant review and oversight, and may incorporate some judgment both in the determination of the scenarios' forecasts and the probability weights that are assigned to them. Qualitative adjustments or overlays may also be made as temporary adjustments using expert credit judgment in circumstances where, in the Bank's view, the existing regulatory guidance, inputs, assumptions, and/or modelling techniques do not capture all relevant risk factors. The use of management overlays may require significant judgment that may impact the amount of allowance recognized.

#### *Significant Increase in credit risk (SIR)*

The assessment of SIR since origination of a financial asset considers borrower-specific quantitative and qualitative information without consideration of collateral, and the impact of forward-looking information. Quantitative models may not always be able to capture all reasonable and supportable information that may indicate a significant increase in credit risk. Qualitative factors may be assessed to supplement the gap. Examples of situations include changes in adjudication criteria for a particular group of borrowers; changes in portfolio composition and natural disaster events impacting certain portfolios. For retail exposures, a significant increase in credit risk cannot be assessed using forward looking information at an individual account level. Therefore, the assessment must be done at the segment level. Segment migration thresholds exist for each PD model by product which considers the proportionate change in PD as well as the absolute change in PD. The thresholds used for PD migration are reviewed and assessed at least annually, unless there is a significant change in credit risk management practices in which case the review is brought forward.

For Non-retail exposures the Bank uses an internal risk rating scale (IG codes) for its non-retail exposures. All non-retail exposures have an IG code assigned that reflects the probability of default of the borrower. Both borrower specific and non-borrower specific (i.e. macroeconomic) forward looking information is considered and reflected in the IG rating. Significant increase in credit risk is evaluated based on the migration of the exposures among IG codes.

#### **Fair value of financial instruments**

All financial instruments are measured at fair value on initial recognition. Subsequent measurement of a financial instrument depends on its classification. The contractual cash flow characteristics of a financial instrument and the business model under which it is held determines such classification. Non-trading loans and receivables, certain securities and most financial liabilities are carried at amortized cost unless classified or designated as fair value through profit and loss or fair value through other comprehensive income at inception.

Fair value of a financial asset or liability is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants in the principal, or in its absence, the most advantageous market to which the Bank has access at the measurement date. The best evidence of fair value for a financial instrument is the quoted price in an active market. Unadjusted quoted market prices for identical instruments represent a Level 1 valuation. Quoted prices are not always available for over-the-counter transactions, as well as transactions in inactive or illiquid markets. In these instances, internal models that maximize the use of observable inputs are used to estimate fair value. The chosen valuation technique incorporates all the factors that market participants would take into account in pricing a transaction. When all significant inputs are observable, the valuation is classified as Level 2. Financial instruments traded in a less active market have been valued using indicative market prices, present value of cash flows or other valuation techniques. Fair value estimates normally do not consider forced or liquidation sales. Where financial instruments trade in inactive markets or when using models where observable parameters do not exist, greater management judgement is required for valuation purposes such as multiple of the underlying earnings, pricing by third party providers, discount rates, volatilities and correlations. Valuations that require the significant use of unobservable inputs are considered Level 3. The calculation of estimated fair value is based on market conditions at a specific point in time and therefore may not be reflective of future fair values.

The Bank has controls and processes in place to ensure that the valuation of financial instruments is appropriately determined. Global Risk Management (GRM) is responsible for the design and application of the Bank's risk management framework. GRM is independent from the Bank's business units and is overseen by Executive Management and the Board of Directors. Senior management committees within GRM oversee and establish standards for risk management processes that are critical in ensuring that appropriate valuation methodologies and policies are in place for determining fair value.

Where possible, valuations are based on quoted prices or observable inputs obtained from active markets. GRM oversees a monthly Independent Price Verification (IPV) process in order to assess the reliability and accuracy of prices and inputs used in the determination of fair value. The IPV process is performed by price verification groups that are independent from the business. The Bank maintains an approved list of pricing sources that are used in the IPV process. These sources include, but are not limited to, brokers, dealers and consensus pricing services. The valuation policies relating to the IPV process require that all pricing or rate sources used be external to the Bank. On a periodic basis, an independent assessment of pricing or rate sources is also performed by GRM to determine market presence or market representative levels.

Where quoted prices are not readily available, such as for transactions in inactive or illiquid markets, internal models that maximize the use of observable inputs are used to estimate fair value. An independent senior management committee within GRM oversees the vetting, approval and ongoing validation of valuation models used in determining fair value. Risk policies associated with model development are approved by Executive Management and/or key risk committees.

In determining fair value for certain instruments or portfolios of instruments, valuation adjustments or reserves may be required to arrive at a more accurate representation of fair value. The Bank's policy of applying valuation reserves to a portfolio of instruments is approved by a senior management committee. These reserves include adjustments for credit risk, bid-offer spreads, unobservable parameters, constraints on prices in inactive or illiquid markets and when applicable funding costs. The methodology for the calculation of valuation reserves are reviewed at least annually by senior management.

Valuation adjustments recorded against the fair value of financial assets and financial liabilities totaled \$138 million as at October 31, 2018, (2017 – \$94 million), net of any write-offs. These valuation adjustments are due mainly to credit risk considerations and bid-offer spreads on derivative transactions.

As at October 31, 2018, a funding valuation adjustment (FVA) of \$57 million pre-tax (2017 – \$80 million) was recorded relating to uncollateralized derivative instruments.

The Bank discloses the classification of all financial instruments carried at fair value in a hierarchy based on the determination of fair value. The valuation hierarchy is as follows:

- Level 1 – fair value is based on unadjusted quoted prices in active markets for identical instruments,
- Level 2 – fair value is based on models using significant market-observable inputs other than quoted prices for the instruments, or
- Level 3 – fair value is based on models using significant inputs that are not based on observable market data.

The Bank's assets and liabilities which are carried at fair value as classified by the valuation hierarchy are reflected in Note 7. The percentage of each asset and liability category by fair value hierarchy level are outlined as follows:

**T54** Fair value hierarchy of financial instruments carried at fair value

Fair value hierarchy As at October 31, 2018	Assets			Liabilities	
	Trading assets (incl. precious metals)	Investment securities	Derivatives	Obligations related to securities sold short	Derivatives
Level 1	63%	65%	3%	77%	3%
Level 2	37%	34%	97%	23%	97%
Level 3	–%	1%	–%	–%	–%
	100%	100%	100%	100%	100%

### Employee benefits

The Bank provides pension and other benefit plans for eligible employees in Canada and internationally. Pension benefits are offered in the form of defined benefit pension plans (generally based on an employee's length of service and average earnings at retirement), and in the form of defined contribution pension plans (where the Bank's contribution is fixed and there is no legal or constructive obligation to pay further amounts). Other benefits include post-retirement health care, dental care and life insurance, along with other long-term employee benefits such as long-term disability benefits.

The employee benefit expenses and the related benefit obligation are calculated using actuarial methods and certain actuarial assumptions. These assumptions are based on management's best estimate and are reviewed and approved annually. The most significant assumption is the discount rate used to determine the defined benefit obligation, which is set by reference to the yields on high quality corporate bonds that have durations that match the terms of the Bank's obligations. Separate discount rates are used to determine the annual benefit expense in Canada and the US. These rates are determined with reference to the yields on high quality corporate bonds with durations that match the various components of the annual benefit expense. The discount rate used to determine the annual benefit expense for all other plans is the same as the rate used to determine the defined benefit obligation. If the assumed discount rates were 1% lower, the benefit expense for 2018 would have been \$135 million higher. Other key assumptions include future compensation, health care costs, employee turnover, retirement age and mortality. When making these estimates, management considers expectations of future economic trends and business conditions, including inflation rates as well as other factors, such as plan specific experience and best practices.

The Bank uses a measurement date of October 31, and based on this measurement date, the Bank reported a deficit of \$231 million (2017 – \$513 million) in its principal pension plans and a deficit of \$1,134 million (2017 – \$1,392 million) in its principal other benefit plans, which are typically unfunded, as at October 31, 2018, as disclosed in Note 28 to the consolidated financial statements.

Actual experience that differs from assumptions made by management will result in a net actuarial gain or loss recognized immediately in other comprehensive income except for other long-term employee benefits where they are recognized in the Consolidated Statement of Income.

Note 28 contains details of the Bank's employee benefit plans, such as the disclosure of pension and other benefit amounts, management's key assumptions, and a sensitivity analysis of changes in these assumptions on the employee benefit obligation and expense.

### Corporate income taxes

Management exercises judgment in determining the provision for income taxes and deferred income tax assets and liabilities. The provision is based on management's expectations regarding the income tax consequences of transactions and events during the period. Management interprets the tax legislation for each jurisdiction in which the Bank operates and makes assumptions about the expected timing of the reversal of deferred income tax assets and liabilities. If management's interpretations of the legislation differ from those of the tax authorities or if the actual timing of the reversals of the deferred income tax assets and liabilities is not as anticipated, the provision for income taxes could increase or decrease in future periods.

Total deferred tax assets related to the Bank's unused income tax losses from operations arising in prior years were \$338 million as at October 31, 2018 (2017 – \$417 million). The tax related to temporary differences, unused tax losses and unused tax credits for which no deferred tax asset is recognized in the Consolidated Statement of Financial Position amounted to \$14 million (2017 – \$82 million). The amount related to unrecognized tax losses was \$7 million, which will expire as follows: \$1 million in 2020 and \$6 million in 2023.

The Bank maintains provisions for uncertain tax positions that it believes appropriately reflect the risk of tax positions under discussion, audit, dispute, or appeal with tax authorities, or which are otherwise considered to involve uncertainty. These provisions are made using the Bank's best estimate of the amount expected to be paid based on an assessment of all relevant factors, which are reviewed at the end of each reporting period.

In November 2016, the Bank received a federal reassessment of \$179 million for tax and interest as a result of the Canada Revenue Agency denying the tax deductibility of certain Canadian dividends received during the 2011 taxation year. In August 2017, the Bank received a reassessment of \$185 million for tax and interest for the 2012 taxation year. The circumstances of the dividends subject to the reassessment are similar to those prospectively addressed by recently enacted rules which had been introduced in the 2015 Canadian federal budget. In June 2018, the Bank received a reassessment of \$211 million for tax and interest in respect of the same circumstances for the 2013 taxation year. The Bank is confident that its tax filing position was appropriate and in accordance with the relevant provisions of the Income Tax Act (Canada), and intends to vigorously defend its position.

Note 27 of the 2018 consolidated financial statements contains further details with respect to the Bank's provisions for income taxes.

### Structured entities

In the normal course of business, the Bank enters into arrangements with structured entities on behalf of its customers and for its own purposes. These structured entities can be generally categorized as multi-seller commercial paper conduits, Bank funding vehicles and structured finance entities. Further details are provided in the Off-balance sheet arrangements section.

Management is required to exercise judgement to determine whether a structured entity should be consolidated. This evaluation involves understanding the arrangements, determining whether decisions about the relevant activities are made by means of voting rights or other contractual arrangements, and determining whether the Bank controls the structured entity.

The Bank controls an investee when it is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. The three elements of control are:

- power over the investee;
- exposure, or rights, to variable returns from involvement with the investee; and
- the ability to use power over the investee to affect the amount of the Bank's returns.

This definition of control applies to circumstances:

- when voting rights or similar rights give the Bank power, including situations where the Bank holds less than a majority of voting rights or involving potential voting rights;
- when an investee is designed so that voting rights are not the dominant factor in deciding who controls the investee (i.e., relevant activities are directed by contractual arrangements);
- involving agency relationships; and
- when the Bank has control over specified assets of an investee.

The Bank does not control an investee when it is acting in an agent's capacity. The Bank assesses whether it is an agent by determining whether it is primarily engaged to act on behalf and for the benefit of another party or parties. Factors that the Bank considers in this assessment include the scope of its decision-making authority over the investee, the rights held by other parties, the remuneration to which it is entitled, and the Bank's exposure to variability of returns from other interests that it holds in the investee.

The analysis uses both qualitative and quantitative analytical techniques and involves the use of a number of assumptions about the business environment in which the structured entity operates and the amount and timing of future cash flows.

The Bank reassesses whether it controls an investee if facts and circumstances indicate that one or more of the three elements of control change.

Management is required to exercise judgement to determine if a change in control event has occurred.

During 2018, there were no change in control events that caused the Bank to change its control conclusion of its multi-seller conduits or other structured entities.

As described in Note 15 to the consolidated financial statements and in the discussion of off-balance sheet arrangements, the Bank does not control the two Canadian-based multi-seller conduits that it sponsors and they are not required to be consolidated on the Bank's Consolidated Statement of Financial Position. The Bank controls its U.S.-based multi-seller conduit and consolidates it on the Bank's Consolidated Statement of Financial Position.

### Goodwill

For the purpose of impairment testing, goodwill acquired in a business combination is, on the acquisition date, allocated to each of the Bank's group of cash-generating units (CGU) that are expected to benefit from the particular acquisition.

Goodwill is not amortized but tested for impairment annually and when circumstances indicate that the carrying value may be impaired.

Goodwill is reviewed at each reporting date to determine whether there is any indication of impairment. Each CGU to which goodwill is allocated for impairment testing purposes reflects the lowest level at which goodwill is monitored for internal management purposes.

The Bank determines the carrying value of the CGU using a regulatory capital approach based on credit, market, and operational risks, and leverage, consistent with the Bank's capital attribution for business line performance measurement. An impairment loss is recognized if the carrying amount of a CGU exceeds its recoverable amount. The recoverable amount is the greater of fair value less costs of disposal and value in use. If either fair value less costs of disposal or value in use exceeds the carrying amount, there is no need to determine the other. The recoverable amount for the CGU has been determined using the fair value less costs of disposal method. In arriving at such value an appropriate valuation model is used which considers various factors including normalized net income, price earnings multiples and control premium. These calculations are corroborated by valuation multiples, quoted share prices for publicly traded subsidiaries or other available fair value indicators. An impairment loss, in respect of goodwill, is not reversed.

Significant judgement is applied in determining the recoverable amounts of the CGU and assessing whether certain events or circumstances constitute objective evidence of impairment.

Goodwill was assessed for annual impairment based on the methodology as at July 31, 2018, and no impairment was determined to exist. Additionally, there were no impairment indicators noted as of October 31, 2018.

### Indefinite life intangible assets

Intangible assets with indefinite useful lives are not amortized but tested for impairment annually and when circumstances indicate that the carrying value may be impaired. Intangible assets are reviewed at each reporting date to determine whether there is any indication of impairment.

The recoverable amount is the greater of fair value less costs of disposal and value in use. If either fair value less costs of disposal or value in use exceeds the carrying amount, there is no need to determine the other. Value in use method is used by the Bank to determine the recoverable amount of the intangible asset. In determining value in use, an appropriate valuation model is used which considers factors such as management-approved cash flow projections, discount rate and terminal growth rate. An impairment loss is recognized if the carrying amount of the intangible asset exceeds its recoverable amount. Impairment losses recognized in prior periods are reassessed at each reporting period for any indication that the loss has decreased or no longer exists. An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the intangible asset's carrying amount does not exceed the carrying amount that would have been determined if no impairment loss had been recognized.

The recoverable amount is significantly impacted by the discount rate and the terminal value. Significant judgement is applied in determining the intangible asset's recoverable amount and assessing whether certain events or circumstances constitute objective evidence of impairment.

Intangible assets were assessed for annual impairment based on the methodology as at July 31, 2018, and no impairment was determined to exist. Additionally, there were no impairment indicators noted as of October 31, 2018.

### Derecognition of financial assets

Financial assets are derecognized when the contractual rights to the cash flows from the asset have expired, which occurs with repayment by the borrower or upon substantial modification of the asset terms. Assets are also derecognized when the Bank transfers the contractual rights to receive the cash flows from the financial asset, or has assumed an obligation to pay those cash flows to an independent third-party, and the Bank has transferred substantially all the risks and rewards of ownership of that asset to an independent third-party.

Management has to apply judgement in determining whether a modification of the terms of the financial asset is considered to be substantial. For loans, this includes the nature of the modification and the extent of changes to terms including interest rate, authorized amount, term or type of underlying collateral.

Management also has to apply judgement in determining, based on specific facts and circumstances, whether the Bank has retained or transferred substantially all the risks and rewards of ownership of the financial asset. Where substantially all the risks and rewards of ownership of the financial asset are neither retained nor transferred, the Bank derecognizes the transferred asset only if it has lost control over that asset. If the Bank retains control over the asset, it will continue to recognize the asset to the extent of its continuing involvement.

The majority of assets transferred under repurchase agreements, securities lending agreements, securitizations of fully insured Canadian residential mortgages, and securitizations of personal lines of credit, credit cards and auto loans do not qualify for derecognition. The Bank continues to record the transferred assets on the Consolidated Statement of Financial Position as secured financings. Further information on derecognition of financial assets can be found in Note 14 of the consolidated financial statements.

### Provisions

The Bank recognizes a provision if, as a result of a past event, the Bank has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Probable in this context means more likely than not. Significant judgement is required in determining whether a present obligation exists and in estimating the probability, timing, and amount of any future outflows.

#### *Litigation and other*

In the ordinary course of business, the Bank and its subsidiaries are routinely defendants in, or parties to a number of pending and threatened legal actions and regulatory proceedings, including actions brought on behalf of various classes of claimants. In view of the inherent difficulty of predicting the outcome of such matters, the Bank cannot state what the eventual outcome of such matters will be.

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

### Future Accounting Developments

The Bank actively monitors developments and changes in accounting standards from the IASB as well as regulatory requirements from the Canadian Securities Administrators and OSFI.

#### Effective November 1, 2018

##### *Revenue from contracts with customers*

The IASB issued IFRS 15 *Revenue from Contracts with Customers* (IFRS 15), which replaces the previous revenue standard IAS 18 *Revenue*, and the related Interpretations on revenue recognition.

The standard is a control-based model as compared to the existing revenue standard which is primarily focused on risks and rewards and provides a single principle based framework to be applied to all contracts with customers that are in scope of the standard. Under the new standard, revenue is recognized when a customer obtains control of a good or service. Transfer of control occurs when the customer has the ability to direct the use of and obtain the benefits of the good or service. The standard introduces a new five step model governing revenue recognition to be applied to contracts with customers. The Bank must also determine whether its performance obligation is to provide the service itself (i.e. the Bank acts as a principal) or to arrange another party to provide the service (i.e. the Bank acts as an agent).

The Bank has assessed the scope of the new guidance to be limited to fees and commission revenues from wealth management and banking services in Canadian and International Banking and underwriting and advisory fees in Global Banking and Markets.

The Bank will adopt the standard and its amendments as of November 1, 2018 using the modified retrospective approach. Under this approach, the Bank will recognize the cumulative effect of initially applying the standard as an adjustment to the opening balance of retained earnings as of November 1, 2018, without restating comparative periods. As of November 1, 2018, the opening balance of retained earnings is expected to decrease by approximately \$60 million (net of tax). The decrease in retained earnings relates to certain costs no longer eligible for deferral under the new standard and the re-measurement of certain liabilities at fulfillment cost.

The presentation of certain costs will also change prospectively from non-interest expenses to non-interest income where amounts are deemed to be part of consideration payable to customers or the Bank is deemed to be acting as an agent. This presentation change will not have a material impact to the Bank.

#### Effective November 1, 2019

##### *Financial instruments: Prepayment features with negative compensation*

On October 12, 2017, the IASB issued an amendment to IFRS 9 *Financial Instruments*, relating to prepayment features with negative compensation. The amendment will be effective prospectively for annual periods beginning on or after January 1, 2019, which will be effective November 1, 2019 for the Bank. Based on preliminary assessments, the amendment is not expected to have a material impact to the Bank.

##### *Leases*

On January 13, 2016, the IASB issued IFRS 16 *Leases*, which requires a lessee to recognize an asset for the right to use the leased item and a liability for the present value of its future lease payments. IFRS 16 will result in leases being recorded on the Bank's balance sheet, including those currently classified as operating leases except for short-term leases and leases with low value of the underlying asset. IFRS 16 substantially carries forward the lessor accounting requirements in IAS 17.

IFRS 16 is effective for the Bank on November 1, 2019. On transition there are practical expedients available whereby the Bank will not need to reassess whether a contract is, or contains a lease, or reassess the accounting of sale leaseback transactions recognized prior to the date of initial application. A lessee will apply IFRS 16 to its leases either retrospectively to each prior reporting period presented; or retrospectively with the cumulative effect of initially applying IFRS 16 being recognized at the date of initial application.

The Bank is currently in the process of assessing existing contractual relationships to identify the existing population of leases that would be recorded on the balance sheet under the new standard. The Bank continues to evaluate the potential impact to the existing IT systems and processes and next steps include performing an initial quantification of the existing obligations and reviewing the additional disclosures required by the new standard. During 2019, the Bank will also complete its assessment of various practical expedients and formulate its accounting policies under IFRS 16.

##### *IFRIC 23 Uncertainty over income tax treatments*

On June 7, 2017, the IASB issued IFRIC 23 that is effective for the Bank beginning November 1, 2019. The interpretation clarifies application of recognition and measurement requirements in IAS 12 income taxes when there is uncertainty over income tax treatments. The Bank is currently assessing the impact of the interpretation.

##### *Employee Benefits*

On February 7, 2018, the IASB issued narrow-scope amendments to pension accounting that are effective for the Bank beginning November 1, 2019. The amendments relate to when a plan amendment, curtailment or settlement has occurred. In such instances, the Bank is required to use updated assumptions to determine current service cost and net interest for the remainder of the reporting period after the change to the plan. For the Bank, the narrow scope amendments are to be applied prospectively to plan amendments, curtailments and settlements occurring after November 1, 2019.

#### Effective November 1, 2020

##### *Conceptual Framework*

On March 29, 2018, the IASB issued the revised Conceptual Framework for Financial Reporting (Framework) that is effective for the Bank beginning November 1, 2020. The Framework itself is not a standard, and does not override existing standards. It is used by the IASB in developing accounting standards. The Bank is currently assessing the impact of the revisions.

##### *Definition of business*

On October 22, 2018, the IASB issued a narrow-scope amendment to IFRS 3 *Business Combination*. The amendments will help companies determine whether an acquisition is of a business or a group of assets. Distinguishing between a business and a group of assets is important because an acquirer recognizes goodwill only when acquiring a business. The amendments apply to transactions for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after January 1, 2020. Earlier adoption is permitted. The Bank is currently assessing the impact.

##### *Definition of material*

On October 31, 2018, the IASB issued amendments to IAS 1 *Presentation of Financial Statements* and IAS 8 *Accounting Policies, Changes in Accounting Estimates and Errors*, clarifying the definition of material. Under the new definition, information is material if omitting, misstating or obscuring it could reasonably be expected to influence the decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity. The explanations accompanying the definition have also been improved. The amendments are effective prospectively for annual periods beginning on or after January 1, 2020. Earlier adoption is permitted. The Bank is currently assessing the impact.

#### Effective November 1, 2021

##### *Insurance contracts*

On May 18, 2017, the IASB issued IFRS 17 *Insurance Contracts*, which provides a comprehensive principle-based framework for the measurement and presentation of all insurance contracts. The new standard will replace IFRS 4 *Insurance Contracts* and requires insurance contracts to be measured using current fulfillment cash flows and for revenue to be recognized as the service is provided over the coverage period. On November 14, 2018, the IASB tentatively decided to defer the effective date, by one year, to annual periods on or after January 1, 2022. The Bank will continue to track the IASB Board's meeting agenda items on issues and discussions related to the standard, further updates will be provided in Q1 2019.

The IFRS 17 project structure and governance has been established along with a Project Management Office to assist the Executive Steering and Project Operations Committees. The committees comprise of representatives from Global Finance, Global Insurance Actuarial Services, Information Technology and the Insurance Business Operations. The Bank is currently in the Evaluation and Design Solution phase of the project, with Implementation planned for Fiscal 2019 through 2022.

## Regulatory Developments

The Bank continues to monitor and respond to global regulatory developments relating to a broad spectrum of topics, including consumer protection measures and cybersecurity, in order to ensure that control and business units are responsive on a timely basis and business impacts, if any, are minimized.

### Bank Recapitalization (Bail-in) Regime and Total Loss Absorbing Capacity (TLAC)

On September 23, 2018, the regulations under the Canada Deposit Insurance Corporation Act (Canada) (the "CDIC Act") and the Bank Act (Canada) (collectively, the "Bail-In Regulations") providing the details of conversion, issuance and compensation regimes for bail-in instruments issued by domestic systemically important banks, including the Bank, came into force. Pursuant to the CDIC Act, in circumstances where the Superintendent of Financial Institutions has determined that the Bank has ceased, or is about to cease, to be viable, the Governor in Council may, upon a recommendation of the Minister of Finance that he or she is of the opinion that it is in the public interest to do so, grant an order directing CDIC to convert all or a portion of certain shares and liabilities of the Bank into common shares of the Bank. For a description of the Canadian bank resolution powers and the consequent risk factors attaching to certain liabilities of the Bank, reference is made to the Annual Information Form.

On April 18, 2018, OSFI issued guidelines on Total Loss Absorbing Capacity (TLAC), which will apply to Canada's D-SIBs as part of the Federal Government's bail-in regime. The standards are intended to address the sufficiency of a systemically important bank's loss absorbing capacity in supporting its recapitalization in the event of its failure. On August 21, 2018, OSFI provided notification requiring systemically important banks to maintain a minimum of 21.5% plus the domestic stability buffer of TLAC eligible instruments relative to their RWAs and 6.75% relative to their leverage exposures. We are expected to comply with the minimum TLAC requirements by November 1, 2021 and to begin disclosing our TLAC ratios in the first quarter of 2019. The Bank does not anticipate any challenges in meeting these TLAC requirements.

### United Kingdom and European Regulatory Reform

The U.K. is in negotiations to exit the E.U. and the two-year negotiation period triggered by U.K.'s formal notice of intention to withdraw from the E.U. ends on March 29, 2019. Political agreement has been reached on a transition period, which would extend until December 31, 2020 (and possibly longer), providing additional time in which to ensure readiness, however that is dependent on an overall withdrawal agreement being concluded and ratified. If the transitional period is ratified then all E.U. legislation will continue to apply in the U.K. for its duration. There remains a possibility that the U.K. will leave the E.U. on March 29, 2019 without having a withdrawal agreement in place (a so-called "hard" Brexit).

The U.K.'s exit from the E.U. may result in significant changes in law(s), which may impact the Bank's business, financial condition and/or results of operations and could adversely impact the Bank's cost of funding in Europe. The Bank continually monitors developments to prepare for changes that have the potential to impact its operations in the U.K. and elsewhere in Europe and is developing and revising its contingency plans accordingly.

### Cybersecurity and privacy developments

On November 1, 2018, changes to Canada's Personal Information Protection and Electronic Documents Act (PIPEDA) went into effect. The changes require domestic and foreign organizations, such as the Bank, subject to PIPEDA to: (a) notify individuals impacted by privacy breaches; (b) report privacy breaches to the Office of the Privacy Commissioner of Canada and others in certain circumstances; and (c) keep certain records of privacy breaches. The impact to the Bank is not expected to be significant.

### Regulatory Initiatives Impacting Financial Services in Canada

The federal government plans to introduce this year a comprehensive consumer protection framework into the Bank Act which will afford additional protections to consumers and will also enhance the mandate and powers of the Financial Consumer Agency of Canada (FCAC), which is the consumer protection regulator for federally regulated entities. Federal regulatory agencies continue to focus on sales practices at Canadian banks. In addition, the FCAC's new Supervisory Framework came into effect on October 1, 2018. The Framework outlines the principles and processes that underpin how the FCAC fulfills its supervision mandate, to promote, monitor and enforce market conduct obligations.

Provincial consumer protection initiatives are also being monitored to assess their possible implications from a financial services perspective. The federal government introduced legislative amendments in the 2018 Budget Implementation Act which are designed to provide greater flexibility for financial institutions to undertake and leverage broader financial technology activities and investments. Specifically, banks will be afforded greater flexibility in regard to referrals/networking, identification, authentication and verification services, permitted investments, and the ability to engage in certain financial technology activities without ministerial consent.

The relevant amendments to the Bank Act itself were given royal assent on June 21, 2018, although the pursuant regulations are not yet drafted, and are likely to be subject to a series of consultations before their final publication.

### Basel Committee on Banking Supervision – Finalized Basel III reforms

In December 2017, the Group of Governors and Heads of Supervision (GHOS), the oversight body of the Basel Committee on Banking Supervision (BCBS), announced that they have agreed on an output floor of 72.5% and have finalized the remaining Basel III reforms.

The final Basel III reform package includes: a revised standardized approach for credit risk; revisions to the internal ratings-based approach for credit risk; revisions to the credit valuation adjustment (CVA) framework, including the removal of the internally modelled approach and the introduction of a revised standardized approach; a revised standardized approach for operational risk, which will replace the existing standardized approaches and the advanced measurement approaches; revisions to the measurement of the leverage ratio and a leverage ratio buffer for global systemically important banks (G-SIBs), which will take the form of a Tier 1 capital buffer set at 50% of a G-SIB's risk-weighted capital buffer; and an aggregate output floor, which will ensure that banks' risk-weighted assets (RWAs) generated by internal models are no lower than 72.5% of RWAs as calculated by the Basel III framework's standardized approaches. Banks will also be required to disclose their RWAs based on these standardized approaches. Implementation of the new Basel III standards will be required in 2022. This includes the Fundamental Review of the Trading Book (FRTB) rules, which represents a delay from 2020. There is a phase-in period for the 72.5% output floor from January 1, 2022 until January 2027.

In July 2018, OSFI issued a discussion paper seeking views from interested stakeholders on its proposed policy direction and its timelines for implementation of the final Basel III reforms in Canada. OSFI supports the changes proposed within the final Basel III reforms and intends to implement them domestically, while also considering the adjustments required to recognize the unique characteristics of the Canadian market, improving risk sensitivity and providing the right incentives, while promoting the safety and soundness of deposit taking institutions in consideration of level playing field and competitiveness issues. As part of these adjustments, OSFI is considering eliminating the BCBS' transitional provisions for the output floor, setting the output floor at 72.5% commencing the first quarter of 2022. Responses to the questions raised within the discussion paper were due to OSFI by October 19, 2018. The Bank will continue to monitor and prepare for developments impacting regulatory capital requirements.

#### Regulatory Capital Pillar 3 Disclosure Requirements

In February 2018, the Basel Committee on Banking Supervision (BCBS) issued an update to its Pillar 3 disclosure requirements framework, as the third phase of the Committee's disclosure project, which builds on the first and second phases, published by the Committee in January 2015 and March 2017, respectively. The third phase is primarily to address changes in disclosure requirements from the Basel III reforms finalized in December 2017, as well as other disclosure requirements related to asset encumbrance, capital distribution constraints, and the scope of disclosure requirements across resolution groups.

The Bank's supplementary regulatory capital disclosures as at October 31, 2018 meet OSFI's April 2017 disclosure guideline for the Committee's first phase of the revised Pillar 3 disclosure requirements. OSFI's disclosure guidelines for the implementation of the second and third phases of the Committee disclosure project are awaited.

In May 2018, OSFI issued its disclosure guidelines on Total Loss Absorbing Capacity (TLAC) Disclosure Requirements and Capital Disclosure Requirements (formerly the advisory entitled Public Capital Disclosure Requirements related to Basel III Pillar 3). Together, these guidelines are a key element of a TLAC regime designed to ensure Canada's largest banks maintain a minimum capacity to absorb losses and enhance stability within the financial sector. These disclosure guidelines are effective for quarterly reporting commencing the first quarter of 2019.

#### Regulatory developments relating to liquidity

The Net Stable Funding Ratio (NSFR) is expected to become a minimum standard in OSFI's liquidity framework. The NSFR is aimed at reducing structural funding risk by requiring banks to fund their activities with sufficiently stable sources of funding. OSFI has extended the targeted implementation timeline of the NSFR to January 2020.

#### Benchmark rate reform

In 2014, the Financial Stability Board and Financial Stability Oversight Council wrote a paper 'Reforming Major Interest Rate Benchmarks' recommending the reform or replacement of major interest rate reference rates, particularly interbank offered rates such as LIBOR, EURIBOR and TIBOR. In July 2017, the Financial Conduct Authority in the UK announced it would no longer compel panel banks to make submissions to LIBOR beyond the end of 2021, setting a broad timeline for transition to replacement rates. Europe and Japan have taken steps to either reform or replace EURIBOR and TIBOR, respectively.

The impact is expected to be broad-ranging, affecting derivatives, floating-rate notes, loans, securitizations and mortgages. Firms are working with trade associations and working groups to develop contract language and transition methodology to minimize the financial impact of the change. The Bank is actively participating in industry consultations, raising awareness internally across business lines and working on detailed impact analysis and exposure reports

### Related Party Transactions

#### Compensation of key management personnel

Key management personnel are those persons having authority and responsibility for planning, directing and controlling the activities of the Bank, directly or indirectly, and comprise the directors of the Bank, the President and Chief Executive Officer, certain direct reports of the President and Chief Executive Officer and Group Heads.

#### T55 Compensation of the Bank key management personnel

For the year ended October 31 (\$ millions)	2018	2017
Salaries and cash incentives <sup>(1)</sup>	\$ 18	\$ 17
Equity-based payment <sup>(2)</sup>	27	25
Pension and other benefits <sup>(1)</sup>	4	3
<b>Total</b>	<b>\$ 49</b>	<b>\$ 45</b>

(1) Expensed during the year.

(2) Awarded during the year.

Directors can use some or all of their director fees earned to buy common shares of the Bank at market rates through the Director's Share Purchase Plan. Non-officer directors may elect to receive all or a portion of their fees in the form of deferred stock units which vest immediately. Refer to Note 26 – Share-based payments for further details of these plans.

#### T56 Loans and deposits of key management personnel

Loans are currently granted to key management personnel at market terms and conditions.

As at October 31 (\$ millions)	2018	2017
Loans	\$ 13	\$ 6
Deposits	\$ 6	\$ 8

The Bank's committed credit exposure to companies controlled by directors totaled \$132.4 million as at October 31, 2018 (October 31, 2017 – \$145.2 million) while actual utilized accounts were \$23.9 million (October 31, 2017 – \$11.5 million).

**Transactions with associates and joint ventures**

In the ordinary course of business, the Bank provides normal banking services and enters into transactions with its associated and other related corporations on terms similar to those offered to non-related parties. If these transactions are eliminated on consolidation, they are not disclosed as related party transactions. Transactions between the Bank and its associated companies and joint ventures also qualify as related party transactions and are as follows:

**T57** Transactions with associates and joint ventures

As at and for the year ended October 31 (\$ millions)	2018	2017
Net income / (loss)	<b>\$ (64)</b>	\$ (46)
Loans	<b>702</b>	703
Deposits	<b>151</b>	217
Guarantees and commitments	<b>\$ 123</b>	\$ 114

**Scotiabank principal pension plan**

The Bank manages assets of \$3.8 billion (October 31, 2017 – \$3.0 billion) which is a portion of the Scotiabank principal pension plan assets and earned \$5.0 million (October 31, 2017 – \$3.7 million) in fees.

**Oversight and governance**

The oversight responsibilities of the Audit and Conduct Review Committee (ACRC) with respect to related party transactions include reviewing policies and practices for identifying transactions with related parties that may materially affect the Bank, and reviewing the procedures for ensuring compliance with the Bank Act for related party transactions. The Bank Act requirements encompass a broader definition of related party transactions than is set out in IFRS. The Bank has various procedures in place to ensure that related party information is identified and reported to the ACRC on a semi-annual basis. The ACRC is provided with detailed reports that reflect the Bank's compliance with its established procedures.

The Bank's Internal Audit department carries out audit procedures as necessary to provide the ACRC with reasonable assurance that the Bank's policies and procedures to identify, authorize and report related party transactions are appropriately designed and operating effectively.

## SUPPLEMENTARY DATA

### Geographic Information

#### T58 Net income by geographic segment

For the fiscal years (\$ millions)	2018 <sup>(1)</sup>								2017 <sup>(2)</sup>								2016 <sup>(2)</sup>										
								Other Inter- national	Total								Other Inter- national	Total								Other Inter- national	Total
	Canada	U.S.	Mexico	Peru	Chile	Colombia	national			Canada	U.S.	Mexico	Peru	Chile	Colombia	national			Canada	U.S.	Mexico	Peru	Chile	Colombia	national		
Net interest income	\$7,823	\$691	\$1,561	\$1,378	\$1,117	\$839	\$2,825	\$16,234	\$7,440	\$460	\$1,380	\$1,287	\$817	\$710	\$2,999	\$15,093	\$7,022	\$479	\$1,224	\$1,231	\$763	\$674	\$2,950	\$14,343			
Non-interest income	7,040	843	613	662	565	484	2,612	12,819	6,924	830	536	635	409	455	2,502	12,291	6,893	871	554	600	325	419	2,409	12,071			
Provision for credit losses	802	(34)	239	351	498	511	244	2,611	906	(14)	193	329	145	337	353	2,249	876	112	225	315	113	320	401	2,362			
Non-interest expenses	7,591	701	1,196	770	837	723	3,148	14,966	7,650	606	1,123	762	630	620	3,069	14,460	7,339	633	1,121	740	605	550	3,036	14,024			
Income tax expense	1,596	220	76	235	51	39	451	2,668	1,066	147	125	225	77	71	506	2,217	1,235	155	69	201	45	89	497	2,291			
Subtotal	4,874	647	663	684	296	50	1,594	8,808	4,742	551	475	606	374	137	1,573	8,458	4,465	450	363	575	325	134	1,425	7,737			
Net income attributable to non-controlling interests in subsidiaries	-	-	17	12	28	16	103	176	-	-	12	11	53	60	102	238	-	-	9	12	38	93	99	251			
Total	\$4,874	\$647	\$646	\$672	\$268	\$34	\$1,491	\$8,632	\$4,742	\$551	\$463	\$595	\$321	\$77	\$1,471	\$8,220	\$4,465	\$450	\$354	\$563	\$287	\$41	\$1,326	\$7,486			
Corporate adjustments							(84)								(215)								(369)				
Net income attributable to equity holders of the Bank							\$ 8,548								\$ 8,005								\$ 7,117				

(1) Amounts presented are on a reported basis. Adjusting for the impact of Acquisition-related costs, net income attributable to equity holders of the Bank in 2018 for Canada was \$4,926, Chile was \$439, and Colombia was \$97. Refer to Acquisition-related costs in Non-GAAP measures.

(2) Amounts presented are on a reported basis. Adjusting for the impact of Acquisition-related costs, net income attributable to equity holders of the Bank was \$8,065 in 2017, and it was \$7,471 in 2016. Refer to Acquisition-related costs in Non-GAAP measures.

**T59** Loans and acceptances by geography<sup>(1)</sup>

As at October 31 (\$ billions)	IFRS 9	IAS 39	
	2018	2017	2016
<b>Canada</b>			
Atlantic provinces	\$ 21.9	\$ 22.7	\$ 26.7
Quebec	29.3	29.0	29.7
Ontario	185.7	173.6	156.7
Manitoba and Saskatchewan	17.3	17.1	17.0
Alberta	52.8	51.9	50.8
British Columbia	60.5	55.6	47.6
	<b>367.5</b>	349.9	328.5
<b>U.S.</b>	<b>41.8</b>	36.9	38.5
<b>Mexico</b>	<b>27.5</b>	24.2	20.8
<b>Peru</b>	<b>20.1</b>	18.4	17.8
<b>Chile</b>	<b>43.8</b>	22.8	19.4
<b>Colombia</b>	<b>11.6</b>	9.4	9.3
<b>Other International</b>			
Latin America	8.8	6.6	6.4
Europe	9.4	10.0	8.4
Caribbean and Central America	31.1	31.4	32.6
Asia and Other	11.6	12.6	15.0
	<b>60.9</b>	60.6	62.4
	<b>\$ 573.2</b>	\$ 522.2	\$ 496.7
Total allowance for loan losses	<b>(5.1)</b>	(4.3)	(4.6)
<b>Total loans and acceptances net of allowance for loan losses</b>	<b>\$ 568.1</b>	\$ 517.9	\$ 492.1

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

**T60** Gross impaired loans by geographic segment

As at October 31 (\$ millions)	2018	2017 <sup>(1)</sup>	2016 <sup>(1)</sup>
Canada	\$ 999	\$ 1,049	\$ 1,258
U.S.	80	140	210
Mexico	359	303	301
Peru	581	704	764
Chile	753	565	499
Colombia	619	462	381
Other International	1,739	1,642	1,981
<b>Total</b>	<b>\$ 5,130</b>	<b>\$ 4,865</b>	<b>\$ 5,394</b>

(1) Excludes loans acquired under the Federal Deposit Insurance Corporation (FDIC) guarantee related to the acquisition of R-G Premier Bank of Puerto Rico, for periods prior to 2018.

**T61** Provision against impaired loans by geographic segment<sup>(1)</sup>

For the fiscal years (\$ millions)	2018	2017	2016
Canada	\$ 785	\$ 906	\$ 876
U.S.	(6)	(14)	112
Mexico	239	193	224
Peru	349	329	317
Chile	275	145	112
Colombia	358	337	320
Other International	355	353	401
<b>Total</b>	<b>\$ 2,355</b>	<b>\$ 2,249</b>	<b>\$ 2,362</b>

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

**T62** Cross-border exposure to select countries<sup>(1)</sup>

As at October 31 (\$ millions)	Loans	Trade	Interbank deposits	Government and other securities	Investment in subsidiaries and affiliates	Other	2018 Total	2017 Total
<b>Asia</b>								
China	\$ 1,478	\$ 1,947	\$ 333	\$ 87	\$ 828	\$ 41	\$ 4,714	\$ 4,367
India	1,489	163	–	–	–	20	1,672	2,254
Thailand	101	17	527	–	2,991	4	3,640	3,461
South Korea	650	37	–	–	–	38	725	968
Hong Kong	1,684	86	9	–	–	34	1,813	1,465
Malaysia	179	1	–	–	321	–	501	582
Japan	512	34	178	4,888	–	13	5,625	5,014
Others <sup>(2)</sup>	1,629	154	150	–	–	20	1,953	1,371
<b>Total</b>	<b>\$ 7,722</b>	<b>\$ 2,439</b>	<b>\$ 1,197</b>	<b>\$ 4,975</b>	<b>\$ 4,140</b>	<b>\$ 170</b>	<b>\$ 20,643</b>	<b>\$ 19,482</b>
<b>Latin America</b>								
Chile	\$ 3,374	\$ 1,106	\$ 1,921	\$ 155	\$ 5,161	\$ 248	\$ 11,965	\$ 8,345
Mexico	2,483	355	–	578	3,942	175	7,533	6,901
Brazil	5,513	1,143	–	14	390	536	7,596	5,317
Peru	2,425	93	–	143	4,928	22	7,611	7,080
Colombia	1,310	171	–	–	1,561	8	3,050	2,982
Others <sup>(3)</sup>	134	11	–	–	532	–	677	678
<b>Total</b>	<b>\$ 15,239</b>	<b>\$ 2,879</b>	<b>\$ 1,921</b>	<b>\$ 890</b>	<b>\$ 16,514</b>	<b>\$ 989</b>	<b>\$ 38,432</b>	<b>\$ 31,303</b>
<b>Caribbean and Central America</b>								
Panama	\$ 4,364	\$ 109	\$ 58	\$ –	\$ 319	\$ –	\$ 4,850	\$ 4,329
Costa Rica	1,793	130	–	–	1,034	14	2,971	2,540
El Salvador	391	29	–	–	693	–	1,113	1,270
Dominican Republic	1,132	22	28	–	–	–	1,182	1,222
Jamaica	58	18	–	–	879	–	955	785
Others <sup>(4)</sup>	1,493	65	–	–	425	–	1,983	2,030
<b>Total</b>	<b>\$ 9,231</b>	<b>\$ 373</b>	<b>\$ 86</b>	<b>\$ –</b>	<b>\$ 3,350</b>	<b>\$ 14</b>	<b>\$ 13,054</b>	<b>\$ 12,176</b>
<b>As at October 31, 2018</b>	<b>\$ 32,192</b>	<b>\$ 5,691</b>	<b>\$ 3,204</b>	<b>\$ 5,865</b>	<b>\$ 24,004</b>	<b>\$ 1,173</b>	<b>\$ 72,129</b>	
As at October 31, 2017	\$ 29,654	\$ 4,559	\$ 2,213	\$ 4,972	\$ 20,761	\$ 802	\$ 62,961	

(1) Cross-border exposure represents a claim, denominated in a currency other than the local one, against a borrower in a foreign country on the basis of ultimate risk.

(2) Includes Indonesia, Macau, Singapore, Vietnam, Taiwan and Turkey.

(3) Includes Venezuela and Uruguay.

(4) Includes other English and Spanish Caribbean countries, such as Bahamas, Barbados, British Virgin Islands, Trinidad & Tobago, Turks & Caicos.

## Credit Risk

T63 Loans and acceptances by type of borrower<sup>(1)</sup>

As at October 31 (\$ billions)	2018	2017	2016
Residential mortgages	\$ 253.4	\$ 236.9	\$ 222.9
Personal loans	96.0	89.2	19.4
Credit cards	16.5	14.1	80.1
<b>Personal</b>	<b>\$ 365.9</b>	<b>\$ 340.2</b>	<b>\$ 322.4</b>
Financial services			
Non-bank	\$ 24.6	\$ 20.5	\$ 16.1
Bank <sup>(2)</sup>	4.5	3.8	3.7
Wholesale and retail	25.1	21.1	22.1
Real estate and construction	29.2	24.6	22.6
Energy <sup>(3)</sup>	14.8	14.5	14.5
Transportation	9.3	8.2	9.0
Automotive	14.7	13.0	11.5
Agriculture	11.5	10.2	8.8
Hospitality and leisure	4.0	3.5	3.5
Mining	5.5	4.9	5.4
Metals	3.0	2.6	2.5
Utilities	9.7	8.1	7.8
Health care	5.4	5.6	5.2
Technology and media	12.3	9.6	11.8
Chemicals <sup>(3)</sup>	1.9	2.1	2.7
Food and beverage	7.9	6.3	4.9
Forest products	1.9	1.7	2.5
Other <sup>(4)</sup>	16.9	17.0	14.7
Sovereign <sup>(5)</sup>	5.1	4.7	5.0
<b>Business and government</b>	<b>\$ 207.3</b>	<b>\$ 182.0</b>	<b>\$ 174.3</b>
	<b>\$ 573.2</b>	<b>\$ 522.2</b>	<b>\$ 496.7</b>
Total allowance for loan losses	(5.1)	(4.3)	(4.6)
<b>Total loans and acceptances net of allowance for loan losses</b>	<b>\$ 568.1</b>	<b>\$ 517.9</b>	<b>\$ 492.1</b>

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

(2) Deposit taking institutions and securities firms.

(3) Prior periods have been restated to conform to the current presentation.

(4) Other related to \$2.3 in financing products, \$2.6 in services and \$2.7 in wealth management (2017 – \$3.5, \$2.2, and \$2.3 respectively).

(5) Includes central banks, regional and local governments, and supra-national agencies.

## T64 Off-balance sheet credit instruments

As at October 31 (\$ billions)	2018	2017	2016
Commitments to extend credit <sup>(1)</sup>	\$ 197.4	\$ 185.7	\$ 174.2
Standby letters of credit and letters of guarantee	35.4	35.5	34.5
Securities lending, securities purchase commitments and other	53.7	42.0	40.0
<b>Total</b>	<b>\$ 286.5</b>	<b>\$ 263.2</b>	<b>\$ 248.7</b>

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

**T65** Changes in net impaired loans<sup>(1)</sup>

For the fiscal years (\$ millions)	2018	2017	2016
<b>Gross impaired loans</b>			
Balance at beginning of year	\$ 5,070	\$ 5,394	\$ 4,658
Net additions			
New additions	3,871	4,297	4,684
Acquisition-related	233	–	–
Declassifications	(168)	(42)	(24)
Payments	(722)	(1,427)	(1,344)
Sales	(72)	(50)	(95)
	<b>3,142</b>	<b>2,778</b>	<b>3,221</b>
Write-offs			
Residential mortgages	(219)	(170)	(201)
Personal loans	(1,441)	(1,478)	(1,279)
Credit cards	(1,104)	(1,024)	(671)
Business and government	(276)	(501)	(428)
	<b>(3,040)</b>	<b>(3,173)</b>	<b>(2,579)</b>
Foreign exchange and other	(42)	(134)	94
Balance at end of year	\$ 5,130	\$ 4,865	\$ 5,394
<b>Allowance for credit losses on impaired loans<sup>(2)</sup></b>			
Balance at beginning of year	\$ 1,756	\$ 2,948	\$ 2,573
Provision for credit losses	2,355	2,249	2,362
Write-offs	(3,040)	(3,173)	(2,579)
Recoveries			
Residential mortgages	96	70	20
Personal loans	275	252	305
Credit cards	250	303	217
Business and government	68	55	40
	<b>689</b>	<b>680</b>	<b>582</b>
Foreign exchange and other	(83)	(82)	10
Balance at end of year	\$ 1,677	\$ 2,622	\$ 2,948
<b>Net impaired loans</b>			
Balance at beginning of year	\$ 3,314	\$ 2,446	\$ 2,085
Net change in gross impaired loans	60	(529)	736
Net change in allowance for credit losses on impaired loans	79	326	(375)
Balance at end of year	\$ 3,453	\$ 2,243	\$ 2,446

(1) Excludes loans acquired under the Federal Deposit Insurance Corporation (FDIC) guarantee related to the acquisition of R-G Premier Bank of Puerto Rico, prior to 2018.

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

**T66** Provision for credit losses<sup>(1)</sup>

For the fiscal years (\$ millions)	2018
New provisions	\$ 3,267
Reversals	(223)
Recoveries	(689)
Provision for credit losses on impaired loans (Stage 3)	2,355
Provision for credit losses – performing (Stage 1 and 2)	256
<b>Total Provision for credit losses</b>	<b>\$ 2,611</b>

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

For the fiscal years (\$ millions)	2017	2016
New provisions	\$ 3,057	\$ 3,072
Reversals	(128)	(110)
Recoveries	(680)	(600)
Net provisions for credit losses on impaired loans	2,249	2,362
Collective provision (reversals) on performing loans	–	50
<b>Total Provision for credit losses</b>	<b>\$ 2,249</b>	<b>\$ 2,412</b>

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

**T67** Provision for credit losses against impaired loans by type of borrower

For the fiscal years (\$ millions)	2018	2017	2016
Residential mortgages	\$ 91	\$ 61	\$ 100
Personal loans	1,198	1,152	1,075
Credit cards	833	734	602
<b>Personal</b>	<b>2,122</b>	<b>1,947</b>	<b>1,777</b>
Financial services			
Non-bank	1	10	(1)
Bank	–	1	2
Wholesale and retail	92	63	61
Real estate and construction	48	62	34
Energy	(33)	(8)	290
Transportation	8	20	45
Automotive	9	8	28
Agriculture	15	14	14
Hospitality and leisure	(5)	14	25
Mining	(1)	2	6
Metals	(7)	46	11
Utilities	20	12	20
Health care	12	7	9
Technology and media	7	(1)	14
Chemicals	1	(1)	(7)
Food and beverage	17	18	6
Forest products	5	3	1
Other	(6)	31	23
Sovereign	50	1	4
<b>Business and government</b>	<b>233</b>	<b>302</b>	<b>585</b>
<b>Provision for credit losses on impaired loans</b>	<b>\$ 2,355</b>	<b>\$ 2,249</b>	<b>\$ 2,362</b>

**T68** Impaired loans by type of borrower

As at October 31 (\$ millions)	2018			2017 <sup>(1)</sup>		
	Gross	Allowance for credit losses	Net	Gross	Allowance for credit losses	Net
Residential mortgages	\$ 1,797	\$ 360	\$ 1,437	\$ 1,445	\$ 326	\$ 1,119
Personal loans	1,069	644	425	1,067	1,040	27
Credit cards	–	–	–	543	543	–
<b>Personal</b>	<b>\$ 2,866</b>	<b>\$ 1,004</b>	<b>\$ 1,862</b>	<b>\$ 3,055</b>	<b>\$ 1,909</b>	<b>\$ 1,146</b>
Financial services						
Non-bank	19	13	6	31	20	11
Bank	2	2	–	2	2	–
Wholesale and retail	390	168	222	242	132	110
Real estate and construction	469	112	357	257	115	142
Energy	135	30	105	265	77	188
Transportation	233	60	173	181	73	108
Automotive	50	16	34	20	7	13
Agriculture	150	50	100	55	30	25
Hospitality and leisure	37	1	36	41	7	34
Mining	25	5	20	11	5	6
Metals	48	17	31	107	27	80
Utilities	51	22	29	280	61	219
Health care	76	19	57	52	26	26
Technology and media	21	5	16	7	5	2
Chemicals	10	3	7	4	3	1
Food and beverage	99	50	49	95	35	60
Forest products	27	7	20	22	8	14
Other	159	78	81	123	74	49
Sovereign	263	15	248	15	6	9
<b>Business and government</b>	<b>\$ 2,264</b>	<b>\$ 673</b>	<b>\$ 1,591</b>	<b>\$ 1,810</b>	<b>\$ 713</b>	<b>\$ 1,097</b>
<b>Total</b>	<b>\$ 5,130</b>	<b>\$ 1,677</b>	<b>\$ 3,453</b>	<b>\$ 4,865</b>	<b>\$ 2,622</b>	<b>\$ 2,243</b>

(1) Excludes loans acquired under the Federal Deposit Insurance Corporation (FDIC) guarantee related to the acquisition of R-G Premier Bank of Puerto Rico.

**T69** Total credit risk exposures by geography<sup>(1)(2)</sup>

	2018					2017
	Non-Retail					
As at October 31 (\$ millions)	Drawn	Undrawn	Other exposures <sup>(3)</sup>	Retail	Total	Total
Canada	\$ 101,207	\$ 41,691	\$ 37,748	\$ 341,157	\$ 521,803	\$ 502,224
U.S.	102,265	33,103	42,771	–	178,139	157,386
Chile	23,140	1,038	5,066	23,908	53,152	27,190
Mexico	18,714	1,339	2,611	10,630	33,294	30,528
Peru	15,686	1,506	2,992	8,311	28,495	28,733
Colombia	5,233	486	434	7,496	13,649	10,859
Other International						
Europe	25,357	7,041	10,215	–	42,613	43,030
Caribbean and Central America	17,712	1,676	910	18,004	38,302	39,358
Latin America (other)	9,532	909	227	700	11,368	9,035
Other	22,647	3,514	2,258	–	28,419	30,070
<b>Total</b>	<b>\$ 341,493</b>	<b>\$ 92,303</b>	<b>\$ 105,232</b>	<b>\$ 410,206</b>	<b>\$ 949,234</b>	<b>\$ 878,413</b>
As at October 31, 2017	\$ 309,282	\$ 84,893	\$ 102,373	\$ 381,865	\$ 878,413	

(1) Geographic segmentation is based upon the location of the ultimate risk of the credit exposure. Includes all credit risk portfolios and excludes equities and other assets.

(2) Amounts represent exposure at default.

(3) Includes off-balance sheet lending instruments such as letters of credit, letters of guarantee, derivatives, securitization and repo-style transactions after collateral.

**T70** AIRB credit risk exposures by maturity<sup>(1)(2)</sup>

	2018				2017
	Drawn	Undrawn	Other exposures <sup>(3)</sup>	Total	Total
Residual maturity as at October 31 (\$ millions)					
<b>Non-retail</b>					
Less than 1 year	\$ 145,558	\$ 25,264	\$ 64,808	\$ 235,630	\$ 213,124
One to 5 years	119,182	59,726	29,892	208,800	192,087
Over 5 years	9,228	1,809	6,581	17,618	23,217
<b>Total non-retail</b>	<b>\$ 273,968</b>	<b>\$ 86,799</b>	<b>\$ 101,281</b>	<b>\$ 462,048</b>	<b>\$ 428,428</b>
<b>Retail</b>					
Less than 1 year	\$ 31,406	\$ 19,535	\$ –	\$ 50,941	\$ 51,045
One to 5 years	188,922	–	–	188,922	178,940
Over 5 years	15,259	–	–	15,259	16,299
Revolving credits <sup>(4)</sup>	39,917	28,550	–	68,467	66,027
<b>Total retail</b>	<b>\$ 275,504</b>	<b>\$ 48,085</b>	<b>\$ –</b>	<b>\$ 323,589</b>	<b>\$ 312,311</b>
<b>Total</b>	<b>\$ 549,472</b>	<b>\$ 134,884</b>	<b>\$ 101,281</b>	<b>\$ 785,637</b>	<b>\$ 740,739</b>
As at October 31, 2017	\$ 518,255	\$ 123,443	\$ 99,041	\$ 740,739	

(1) Remaining term to maturity of the credit exposure. Includes all credit risk portfolios and excludes equity securities and other assets.

(2) Exposure at default, before credit risk mitigation.

(3) Off-balance sheet lending instruments, such as letters of credit, letters of guarantee, securitization, derivatives and repo-style transactions after collateral.

(4) Credit cards and lines of credit with unspecified maturity.

**T71** Total credit risk exposures and risk-weighted assets

As at October 31 (\$ millions)	2018						2017	
	AIRB		Standardized <sup>(1)</sup>		Total		Total	
	Exposure at Default <sup>(2)</sup>	CET1 risk-weighted assets <sup>(3)</sup>	Exposure at Default <sup>(2)</sup>	CET1 risk-weighted assets <sup>(3)</sup>	Exposure at Default <sup>(2)</sup>	CET1 risk-weighted assets <sup>(3)</sup>	Exposure at Default <sup>(2)</sup>	CET1 risk-weighted assets <sup>(3)</sup>
<b>Non-retail</b>								
<b>Corporate</b>								
Drawn	\$ 145,000	\$ 70,750	\$ 59,018	\$ 56,897	\$ 204,018	\$ 127,647	\$ 183,262	\$ 114,622
Undrawn	83,885	31,103	5,313	5,273	89,198	36,376	81,214	34,473
Other <sup>(4)</sup>	43,440	10,590	3,501	3,430	46,941	14,020	44,190	15,431
	<b>272,325</b>	<b>112,443</b>	<b>67,832</b>	<b>65,600</b>	<b>340,157</b>	<b>178,043</b>	308,666	164,526
<b>Bank</b>								
Drawn	22,680	3,648	3,208	2,715	25,888	6,363	22,223	6,115
Undrawn	2,146	287	160	159	2,306	446	2,656	477
Other <sup>(4)</sup>	9,846	1,112	143	80	9,989	1,192	9,132	1,623
	<b>34,672</b>	<b>5,047</b>	<b>3,511</b>	<b>2,954</b>	<b>38,183</b>	<b>8,001</b>	34,011	8,215
<b>Sovereign</b>								
Drawn	106,288	3,524	5,299	1,424	111,587	4,948	103,797	4,665
Undrawn	768	95	31	16	799	111	1,023	299
Other <sup>(4)</sup>	1,806	94	6	2	1,812	96	977	26
	<b>108,862</b>	<b>3,713</b>	<b>5,336</b>	<b>1,442</b>	<b>114,198</b>	<b>5,155</b>	105,797	4,990
<b>Total Non-retail</b>								
Drawn	273,968	77,922	67,525	61,036	341,493	138,958	309,282	125,402
Undrawn	86,799	31,485	5,504	5,448	92,303	36,933	84,893	35,249
Other <sup>(4)</sup>	55,092	11,796	3,650	3,512	58,742	15,308	54,299	17,080
	<b>\$ 415,859</b>	<b>\$ 121,203</b>	<b>\$ 76,679</b>	<b>\$ 69,996</b>	<b>\$ 492,538</b>	<b>\$ 191,199</b>	\$ 448,474	\$ 177,731
<b>Retail</b>								
<b>Retail residential mortgages</b>								
Drawn	\$ 205,944	\$ 17,259	\$ 44,517	\$ 18,592	\$ 250,461	\$ 35,851	\$ 234,620	\$ 30,024
	<b>205,944</b>	<b>17,259</b>	<b>44,517</b>	<b>18,592</b>	<b>250,461</b>	<b>35,851</b>	234,620	30,024
<b>Secured lines of credit</b>								
Drawn	21,047	3,639	–	–	21,047	3,639	20,281	3,351
Undrawn	17,864	1,081	–	–	17,864	1,081	15,356	917
	<b>38,911</b>	<b>4,720</b>	<b>–</b>	<b>–</b>	<b>38,911</b>	<b>4,720</b>	35,637	4,268
<b>Qualifying retail revolving exposures</b>								
Drawn	17,337	9,993	–	–	17,337	9,993	16,939	9,676
Undrawn	28,550	3,470	–	–	28,550	3,470	27,445	3,291
	<b>45,887</b>	<b>13,463</b>	<b>–</b>	<b>–</b>	<b>45,887</b>	<b>13,463</b>	44,384	12,967
<b>Other retail</b>								
Drawn	31,176	14,876	42,100	30,826	73,276	45,702	65,924	40,318
Undrawn	1,671	476	–	–	1,671	476	1,300	311
	<b>32,847</b>	<b>15,352</b>	<b>42,100</b>	<b>30,826</b>	<b>74,947</b>	<b>46,178</b>	67,224	40,629
<b>Total retail</b>								
Drawn	275,504	45,767	86,617	49,418	362,121	95,185	337,764	83,369
Undrawn	48,085	5,027	–	–	48,085	5,027	44,101	4,519
	<b>\$ 323,589</b>	<b>\$ 50,794</b>	<b>\$ 86,617</b>	<b>\$ 49,418</b>	<b>\$ 410,206</b>	<b>\$ 100,212</b>	\$ 381,865	\$ 87,888
Securitization exposures	23,346	2,287	–	–	23,346	2,287	23,591	2,529
Trading derivatives	22,843	7,594	301	301	23,144	7,895	24,483	7,147
CVA derivatives	–	3,537	–	1,079	–	4,616	–	2,988
	<b>\$ 785,637</b>	<b>\$ 185,415</b>	<b>\$ 163,597</b>	<b>\$ 120,794</b>	<b>\$ 949,234</b>	<b>\$ 306,209</b>	\$ 878,413	\$ 278,283
Equities	1,754	1,619	–	–	1,754	1,619	1,281	1,188
Other assets <sup>(5)</sup>	–	–	60,124	28,258	60,124	28,258	50,631	25,201
<b>Total credit risk, before scaling factor</b>	<b>\$ 787,391</b>	<b>\$ 187,034</b>	<b>\$ 223,721</b>	<b>\$ 149,052</b>	<b>\$ 1,011,112</b>	<b>\$ 336,086</b>	\$ 930,325	\$ 304,672
Add-on for 6% scaling factor <sup>(6)</sup>	–	11,010	–	–	–	11,010	–	10,487
<b>Total credit risk</b>	<b>\$ 787,391</b>	<b>\$ 198,044</b>	<b>\$ 223,721</b>	<b>\$ 149,052</b>	<b>\$ 1,011,112</b>	<b>\$ 347,096</b>	\$ 930,325	\$ 315,159

(1) Net of specific allowances for credit losses.

(2) Outstanding amount for on-balance sheet exposures and loan equivalent amount for off-balance sheet exposures, before credit risk mitigation.

(3) As at October 31, 2018, CVA risk-weighted assets were calculated using scalars of 0.80, 0.83, and 0.86 for the CET1, Tier 1 and Total capital ratios, respectively (scalars of 0.72, 0.77, and 0.81 in 2017).

(4) Other exposures include off-balance sheet lending instruments, such as letters of credit, letters of guarantee, non-trading derivatives and repo-style exposures, after collateral.

(5) Exposures at Default for Other Assets exclude amounts related to central counterparties.

(6) Basel Committee imposed a scaling factor (6%) on risk-weighted assets for Internal Ratings-Based credit risk portfolios.

## Revenues and Expenses

### T72 Volume/rate analysis of change in net interest income

(\$ millions)	Increase (decrease) due to change in: 2018 versus 2017			Increase (decrease) due to change in: 2017 versus 2016		
	Average volume	Average rate	Net change	Average volume	Average rate	Net change
<b>Net interest income</b>						
Total earning assets	\$ 1,645	\$ 2,495	\$ 4,140	\$ 785	\$ 1,152	\$ 1,937
Total interest-bearing liabilities	408	2,576	2,984	29	1,165	1,194
Change in net interest income	\$ 1,237	\$ (81)	\$ 1,156	\$ 756	\$ (13)	\$ 743
<b>Assets</b>						
Deposits with banks	\$ 10	\$ 327	\$ 337	\$ (85)	\$ 213	\$ 128
Trading assets	(7)	34	27	–	(28)	(28)
Securities purchased under resale agreements	(8)	171	163	(5)	129	124
Investment securities	85	256	341	109	85	194
<b>Loans:</b>						
Residential mortgages	513	411	924	326	(327)	(1)
Personal loans	281	432	713	149	122	271
Credit cards	300	(42)	258	166	85	251
Business and government	471	906	1,377	125	873	998
<b>Total loans</b>	<b>1,565</b>	<b>1,707</b>	<b>3,272</b>	<b>766</b>	<b>753</b>	<b>1,519</b>
<b>Total earning assets</b>	<b>\$ 1,645</b>	<b>\$ 2,495</b>	<b>\$ 4,140</b>	<b>\$ 785</b>	<b>\$ 1,152</b>	<b>\$ 1,937</b>
<b>Liabilities</b>						
<b>Deposits:</b>						
Personal	\$ 131	\$ 471	\$ 602	\$ 106	\$ 156	\$ 262
Business and government	316	1,517	1,833	(101)	937	836
Banks	1	230	231	(7)	82	75
<b>Total deposits</b>	<b>448</b>	<b>2,218</b>	<b>2,666</b>	<b>(2)</b>	<b>1,175</b>	<b>1,173</b>
Obligations related to securities sold under repurchase agreements	(13)	43	30	6	13	19
Subordinated debentures	(43)	30	(13)	(12)	6	(6)
Other interest-bearing liabilities	16	285	301	37	(29)	8
<b>Total interest-bearing liabilities</b>	<b>\$ 408</b>	<b>\$ 2,576</b>	<b>\$ 2,984</b>	<b>\$ 29</b>	<b>\$ 1,165</b>	<b>\$ 1,194</b>

### T73 Provision for income taxes

For the fiscal years (\$ millions)	2018	2017	2016	2018 versus 2017
<b>Income taxes</b>				
Income tax expense	\$ 2,382	\$ 2,033	\$ 2,030	17%
<b>Other taxes</b>				
Payroll taxes	390	380	347	3
Business and capital taxes	464	423	403	10
Harmonized sales tax and other	437	412	363	6
Total other taxes	1,291	1,215	1,113	6
Total income and other taxes <sup>(1)</sup>	\$ 3,673	\$ 3,248	\$ 3,143	13%
Net income before income taxes	\$ 11,106	\$ 10,276	\$ 9,398	8%
Effective income tax rate (%)	21.5	19.8	21.6	1.7
Total tax rate (%) <sup>(2)</sup>	29.6	28.3	29.9	1.3

(1) Comprising \$2,218 of Canadian taxes (2017 – \$1,758; 2016 – \$1,742) and \$1,455 of foreign taxes (2017 – \$1,490; 2016 – \$1,401).

(2) Total income and other taxes as a percentage of net income before income and other taxes.

## MANAGEMENT'S DISCUSSION AND ANALYSIS

**T74** Assets under administration and management

(\$ billions)	2018	2017	2016
<b>Assets under administration</b>			
Personal			
Retail brokerage	\$ 146.5	\$ 151.7	\$ 163.5
Investment management and trust	113.9	107.0	106.4
	260.4	258.7	269.9
Mutual funds	187.5	148.3	139.2
Institutional	68.1	63.2	63.7
<b>Total</b>	<b>\$ 516.0</b>	<b>\$ 470.2</b>	<b>\$ 472.8</b>
<b>Assets under management</b>			
Personal	\$ 54.7	\$ 51.8	\$ 47.9
Mutual funds	173.0	134.0	125.1
Institutional	54.5	20.9	19.7
<b>Total</b>	<b>\$ 282.2</b>	<b>\$ 206.7</b>	<b>\$ 192.7</b>

**T75** Changes in assets under administration and management

As at October 31 (\$ billions)	2018	2017	2016
<b>Assets under administration</b>			
Balance at beginning of year	\$ 470.2	\$ 472.8	\$ 453.9
Net inflows (outflows) <sup>(1)</sup>	51.5	(33.6)	4.3
Impact of market changes, including foreign currency translation	(5.7)	31.0	14.6
<b>Balance at end of year</b>	<b>\$ 516.0</b>	<b>\$ 470.2</b>	<b>\$ 472.8</b>

(1) Includes impact of business acquisitions/dispositions of \$49.2 (2017 – \$(33.5); 2016 – nil).

As at October 31 (\$ billions)	2018	2017	2016
<b>Assets under management</b>			
Balance at beginning of year	\$ 206.7	\$ 192.7	\$ 179.0
Net inflows (outflows) <sup>(1)</sup>	74.4	3.6	6.6
Impact of market changes, including foreign currency translation	1.1	10.4	7.1
<b>Balance at end of year</b>	<b>\$ 282.2</b>	<b>\$ 206.7</b>	<b>\$ 192.7</b>

(1) Includes impact of business acquisitions/dispositions of \$76.0 (2017 – \$(4.3); 2016 – nil).

**T76** Fees paid to the shareholders' auditors

For the fiscal years (\$ millions)	2018	2017	2016
Audit services	\$ 28.9	\$ 28.5	\$ 26.1
Audit-related services	0.8	0.8	0.7
Tax services outside of the audit scope	–	–	–
Other non-audit services	0.4	0.4	0.4
<b>Total</b>	<b>\$ 30.1</b>	<b>\$ 29.7</b>	<b>\$ 27.2</b>

## Selected Quarterly Information

## T77 Selected quarterly information

As at and for the quarter ended	2018 <sup>(1)</sup>				2017			
	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1
<b>Operating results</b> (\$ millions)								
Net interest income	4,220	4,085	3,950	3,936	3,831	3,833	3,728	3,643
Non-interest income	3,228	3,096	3,108	3,152	2,981	3,061	2,853	3,225
Total revenue	7,448	7,181	7,058	7,088	6,812	6,894	6,581	6,868
Provision for credit losses	590	943	534	544	536	573	587	553
Non-interest expenses	4,064	3,770	3,726	3,498	3,668	3,672	3,601	3,689
Income tax expense	523	529	621	709	538	546	332	617
Net income	2,271	1,939	2,177	2,337	2,070	2,103	2,061	2,009
Net income attributable to common shareholders	2,114	1,956	2,042	2,249	1,986	2,016	1,965	1,909
<b>Operating performance</b>								
Basic earnings per share (\$)	1.72	1.60	1.70	1.88	1.66	1.68	1.63	1.58
Diluted earnings per share (\$)	1.71	1.55	1.70	1.86	1.64	1.66	1.62	1.57
Return on equity (%)	13.8	13.1	14.9	16.2	14.5	14.8	14.9	14.3
Productivity ratio (%)	54.6	52.5	52.8	49.3	53.8	53.3	54.7	53.7
Core banking margin (%) <sup>(2)</sup>	2.47	2.46	2.47	2.46	2.44	2.46	2.54	2.40
<b>Financial position information</b> (\$ billions)								
Cash and deposits with financial institutions	62.3	51.9	61.8	57.4	59.7	57.8	50.9	48.4
Trading assets	100.3	92.9	99.7	105.7	98.5	105.1	111.8	106.5
Loans	551.8	548.6	517.9	503.2	504.4	498.6	496.3	477.4
Total assets	998.5	946.7	926.3	923.2	915.3	906.3	921.6	887.0
Deposits	676.5	654.2	640.6	635.8	625.4	618.1	628.2	604.7
Common equity	61.0	60.8	57.3	55.1	55.5	53.4	55.1	53.0
Preferred shares and other equity instruments	4.2	4.2	4.2	4.6	4.6	3.0	3.0	3.2
Assets under administration	516.0	483.2	471.8	470.9	470.2	481.1	494.2	469.6
Assets under management	282.2	254.8	213.1	210.8	206.7	201.3	205.0	194.0
<b>Capital and liquidity measures</b>								
Common Equity Tier 1 (CET1) capital ratio (%)	11.1	11.4	12.0	11.2	11.5	11.3	11.3	11.3
Tier 1 capital ratio (%)	12.5	12.8	13.5	12.7	13.1	12.6	12.5	12.6
Total capital ratio (%)	14.3	14.5	15.3	14.6	14.9	14.8	14.7	14.8
Leverage ratio (%)	4.5	4.9	4.8	4.6	4.7	4.4	4.4	4.5
CET1 risk-weighted assets (\$ billions) <sup>(3)</sup>	400.5	411.4	375.9	382.2	376.4	365.4	374.9	359.6
Liquidity coverage ratio (LCR) (%)	124	125	127	128	125	125	126	132
<b>Credit quality</b>								
Net impaired loans (\$ millions) <sup>(4)</sup>	3,453	3,707	3,381	3,288	2,243	2,273	2,510	2,416
Allowance for credit losses (\$ millions) <sup>(5)</sup>	5,154	5,418	5,017	4,923	4,327	4,290	4,591	4,508
Net impaired loans as a % of loans and acceptances <sup>(4)</sup>	0.60	0.65	0.63	0.63	0.43	0.44	0.49	0.49
Provision for credit losses as a % of average net loans and acceptances (annualized) <sup>(6)</sup>	0.39	0.69	0.42	0.42	0.42	0.45	0.49	0.45
Provision for credit losses on impaired loans as a % of average net loans and acceptances (annualized) <sup>(6)</sup>	0.42	0.41	0.46	0.43	0.42	0.45	0.49	0.45
Net write-offs as a % of average net loans and acceptances (annualized)	0.45	0.39	0.45	0.46	0.44	0.54	0.53	0.49
<b>Adjusted results<sup>(2)</sup></b>								
Adjusted net income (\$ millions)	2,345	2,259	2,190	2,350	2,084	2,117	2,075	2,027
Adjusted diluted earnings per share (\$)	1.77	1.76	1.71	1.87	1.65	1.68	1.63	1.58
Adjusted return on equity (%)	14.1	14.5	15.0	16.3	14.6	14.8	15.0	14.5
Adjusted productivity ratio (%)	53.2	51.8	52.5	49.1	53.6	53.0	54.4	53.3
Adjusted provision for credit losses ratio as a % of average net loans and acceptances <sup>(6)</sup>	0.39	0.40	0.42	0.42	0.42	0.45	0.49	0.45
<b>Common share information</b>								
Closing share price (\$) (TSX)	70.65	77.09	78.92	81.72	83.28	77.67	75.88	77.76
Shares outstanding (millions)								
Average – Basic	1,230	1,223	1,198	1,199	1,198	1,200	1,206	1,209
Average – Diluted	1,246	1,240	1,203	1,215	1,215	1,219	1,223	1,229
End of period	1,227	1,232	1,199	1,198	1,199	1,198	1,202	1,208
Dividends paid per share (\$)	0.85	0.82	0.82	0.79	0.79	0.76	0.76	0.74
Dividend yield (%) <sup>(7)</sup>	4.6	4.2	4.2	3.8	4.0	4.0	3.9	4.0
Market capitalization (\$ billions) (TSX)	86.7	95.0	94.6	97.9	99.9	93.1	91.2	94.0
Book value per common share (\$)	49.75	49.32	47.77	45.98	46.24	44.54	45.86	43.87
Market value to book value multiple	1.4	1.6	1.7	1.8	1.8	1.7	1.7	1.8
Price to earnings multiple (trailing 4 quarters)	10.2	11.3	11.4	11.9	12.7	12.0	12.0	13.1

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

(2) Refer to page 18 for a discussion of non-GAAP measures.

(3) Credit valuation adjustment (CVA) risk-weighted assets were calculated using scalars of 0.80, 0.83 and 0.86 to compute CET1, Tier 1 and Total capital ratios, respectively in 2018 (0.72, 0.77 and 0.81 in 2017).

(4) Excludes loans acquired under the Federal Deposit Insurance Corporation (FDIC) guarantee related to the acquisition of R-G Premier Bank of Puerto Rico, for periods prior to 2018.

(5) Includes allowance for credit losses on all financial assets – loans, acceptances, off-balance sheet exposures, debt securities, and deposits with financial institutions.

(6) Includes provision for credit losses on certain financial assets – loans, acceptances and off-balance sheet exposures.

(7) Based on the average of the high and low common share price for the period.

## Eleven-Year Statistical Review

## T78 Consolidated Statement of Financial Position

As at October 31 (\$ millions)	IFRS							
	2018 <sup>(1)</sup>	2017	2016	2015	2014	2013	2012	2011
<b>Assets</b>								
Cash and deposits with financial institutions	\$ 62,269	\$ 59,663	\$ 46,344	\$ 73,927	\$ 56,730	\$ 53,338	\$ 47,337	\$ 38,723
Precious metals	3,191	5,717	8,442	10,550	7,286	8,880	12,387	9,249
<b>Trading assets</b>								
Securities	85,474	78,652	87,287	78,380	95,363	84,196	74,639	62,192
Loans	14,334	17,312	19,421	18,341	14,508	11,225	12,857	13,607
Other	454	2,500	1,853	2,419	3,377	1,068	100	–
	<b>100,262</b>	98,464	108,561	99,140	113,248	96,489	87,596	75,799
Financial instruments designated at fair value through profit or loss	12	13	221	320	111	106	197	375
Securities purchased under resale agreements and securities borrowed	104,018	95,319	92,129	87,312	93,866	82,533	66,189	47,181
Derivative financial instruments	37,558	35,364	41,657	41,003	33,439	24,503	30,338	37,322
Investment securities	78,396	69,269	72,919	43,216	38,662	34,319	33,376	30,176
<b>Loans</b>								
Residential mortgages	253,357	236,916	222,888	217,498	212,648	209,865	175,630	161,685
Personal loans	96,019	89,227	86,110	–	–	–	–	–
Credit cards	16,485	14,104	13,392	–	–	–	–	–
Personal and credit cards	–	–	–	91,477	84,204	76,008	68,277	63,317
Business and government	191,038	168,449	162,400	153,850	131,098	119,615	111,648	96,743
	<b>556,899</b>	508,696	484,790	462,825	427,950	405,488	355,555	321,745
Allowance for credit losses	5,065	4,327	4,626	4,197	3,641	3,273	2,977	2,689
	<b>551,834</b>	504,369	480,164	458,628	424,309	402,215	352,578	319,056
<b>Other</b>								
Customers' liability under acceptances, net of allowance	16,329	13,560	11,978	10,296	9,876	10,556	8,932	8,172
Property and equipment	2,684	2,381	2,520	2,286	2,272	2,214	2,218	2,504
Investments in associates	4,850	4,586	4,299	4,033	3,461	5,326	4,791	4,434
Goodwill and other intangible assets	17,719	12,106	12,141	11,449	10,884	10,704	8,692	7,639
Deferred tax assets	1,938	1,713	2,021	2,034	1,763	1,938	2,273	2,214
Other assets	17,433	12,749	12,870	12,303	9,759	10,523	11,321	11,579
	<b>60,953</b>	47,095	45,829	42,401	38,015	41,261	38,227	36,542
	<b>\$ 998,493</b>	\$ 915,273	\$ 896,266	\$ 856,497	\$ 805,666	\$ 743,644	\$ 668,225	\$ 594,423
<b>Liabilities</b>								
<b>Deposits</b>								
Personal	\$ 214,545	\$ 200,030	\$ 199,302	\$ 190,044	\$ 175,163	\$ 171,048	\$ 138,051	\$ 133,025
Business and government	422,002	384,988	372,303	375,144	342,367	313,820	293,460	262,833
Financial institutions	39,987	40,349	40,272	35,731	36,487	33,019	34,178	25,376
	<b>676,534</b>	625,367	611,877	600,919	554,017	517,887	465,689	421,234
Financial instruments designated at fair value through profit or loss	8,188	4,663	1,459	1,486	465	174	157	101
<b>Other</b>								
Acceptances	16,338	13,560	11,978	10,296	9,876	10,556	8,932	8,172
Obligations related to securities sold short	32,087	30,766	23,312	20,212	27,050	24,977	18,622	15,450
Derivative financial instruments	37,967	34,200	42,387	45,270	36,438	29,267	35,323	40,236
Obligations related to securities sold under repurchase agreements and securities lent	101,257	95,843	97,083	77,015	88,953	77,508	56,968	38,216
Subordinated debentures	5,698	5,935	7,633	6,182	4,871	5,841	10,143	6,923
Capital instruments	–	–	–	–	–	–	–	2,003
Other liabilities	52,744	43,314	42,716	41,638	34,785	32,047	32,726	29,848
	<b>246,091</b>	223,618	225,109	200,613	201,973	180,196	162,714	140,848
	<b>930,813</b>	853,648	838,445	803,018	756,455	698,257	628,560	562,183
<b>Equity</b>								
<b>Common equity</b>								
Common shares	18,234	15,644	15,513	15,141	15,231	14,516	13,139	8,336
Retained earnings	41,414	38,117	34,752	31,316	28,609	25,068	21,775	18,421
Accumulated other comprehensive income (loss)	992	1,577	2,240	2,455	949	388	(745)	(497)
Other reserves	404	116	152	173	176	193	166	96
	<b>61,044</b>	55,454	52,657	49,085	44,965	40,165	34,335	26,356
Preferred shares and other equity instruments	4,184	4,579	3,594	2,934	2,934	4,084	4,384	4,384
	<b>65,228</b>	60,033	56,251	52,019	47,899	44,249	38,719	30,740
<b>Non-controlling interests</b>								
Non-controlling interests in subsidiaries	2,452	1,592	1,570	1,460	1,312	1,138	946	626
Capital instrument equity holders	–	–	–	–	–	–	–	874
	<b>67,680</b>	61,625	57,821	53,479	49,211	45,387	39,665	32,240
	<b>\$ 998,493</b>	\$ 915,273	\$ 896,266	\$ 856,497	\$ 805,666	\$ 743,644	\$ 668,225	\$ 594,423

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

For the year ended October 31 (\$ millions)	IFRS							
	2018	2017	2016	2015	2014	2013	2012	2011
<b>Revenue</b>								
<b>Interest income<sup>(1)</sup></b>								
Loans	\$ 24,991	\$ 21,719	\$ 20,419	\$ 18,912	\$ 18,176	\$ 17,359	\$ 15,606	\$ 14,373
Securities	1,771	1,403	1,237	922	921	1,000	1,045	986
Securities purchased under resale agreements and securities borrowed	446	283	158	161	180	190	221	221
Deposits with financial institutions	859	522	394	292	263	279	287	275
	<b>28,067</b>	<b>23,927</b>	<b>22,208</b>	<b>20,287</b>	<b>19,540</b>	<b>18,828</b>	<b>17,159</b>	<b>15,855</b>
<b>Interest expense</b>								
Deposits	10,544	7,878	6,793	6,070	6,173	6,397	6,117	5,589
Subordinated debentures	214	226	232	187	204	339	381	369
Capital instruments	–	–	–	–	–	–	–	138
Other	1,118	788	891	938	858	742	691	745
	<b>11,876</b>	<b>8,892</b>	<b>7,916</b>	<b>7,195</b>	<b>7,235</b>	<b>7,478</b>	<b>7,189</b>	<b>6,841</b>
Net interest income	<b>16,191</b>	<b>15,035</b>	<b>14,292</b>	<b>13,092</b>	<b>12,305</b>	<b>11,350</b>	<b>9,970</b>	<b>9,014</b>
Non-interest income <sup>(1)</sup>	<b>12,584</b>	<b>12,120</b>	<b>12,058</b>	<b>10,957</b>	<b>11,299</b>	<b>9,949</b>	<b>9,676</b>	<b>8,296</b>
Total revenue	<b>28,775</b>	<b>27,155</b>	<b>26,350</b>	<b>24,049</b>	<b>23,604</b>	<b>21,299</b>	<b>19,646</b>	<b>17,310</b>
Provision for credit losses <sup>(1)</sup>	<b>2,611</b>	<b>2,249</b>	<b>2,412</b>	<b>1,942</b>	<b>1,703</b>	<b>1,288</b>	<b>1,252</b>	<b>1,076</b>
Non-interest expenses	<b>15,058</b>	<b>14,630</b>	<b>14,540</b>	<b>13,041</b>	<b>12,601</b>	<b>11,664</b>	<b>10,436</b>	<b>9,481</b>
Income before taxes	<b>11,106</b>	<b>10,276</b>	<b>9,398</b>	<b>9,066</b>	<b>9,300</b>	<b>8,347</b>	<b>7,958</b>	<b>6,753</b>
Income tax expense	<b>2,382</b>	<b>2,033</b>	<b>2,030</b>	<b>1,853</b>	<b>2,002</b>	<b>1,737</b>	<b>1,568</b>	<b>1,423</b>
Net income	<b>\$ 8,724</b>	<b>\$ 8,243</b>	<b>\$ 7,368</b>	<b>\$ 7,213</b>	<b>\$ 7,298</b>	<b>\$ 6,610</b>	<b>\$ 6,390</b>	<b>\$ 5,330</b>
Net income attributable to non-controlling interests	\$ 176	\$ 238	\$ 251	\$ 199	\$ 227	\$ 231	\$ 196	\$ 149
Non-controlling interests in subsidiaries	176	238	251	199	227	231	196	91
Capital instrument equity holders	–	–	–	–	–	–	–	58
Net income attributable to equity holders of the Bank	<b>\$ 8,548</b>	<b>\$ 8,005</b>	<b>\$ 7,117</b>	<b>\$ 7,014</b>	<b>\$ 7,071</b>	<b>\$ 6,379</b>	<b>\$ 6,194</b>	<b>\$ 5,181</b>
Preferred shareholders and other equity instrument holders	187	129	130	117	155	217	220	216
Common shareholders	<b>\$ 8,361</b>	<b>\$ 7,876</b>	<b>\$ 6,987</b>	<b>\$ 6,897</b>	<b>\$ 6,916</b>	<b>\$ 6,162</b>	<b>\$ 5,974</b>	<b>\$ 4,965</b>
Earnings per common share (in dollars)								
Basic	\$ 6.90	\$ 6.55	\$ 5.80	\$ 5.70	\$ 5.69	\$ 5.15	\$ 5.27	\$ 4.63
Diluted	\$ 6.82	\$ 6.49	\$ 5.77	\$ 5.67	\$ 5.66	\$ 5.11	\$ 5.18	\$ 4.53
Dividends per common share (in dollars)	\$ 3.28	\$ 3.05	\$ 2.88	\$ 2.72	\$ 2.56	\$ 2.39	\$ 2.19	\$ 2.05

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

## T78A Consolidated Balance Sheet – CGAAP

As at October 31 (\$ millions)	CGAAP		
	2010	2009	2008
<b>Assets</b>			
<b>Cash resources</b>	\$ 46,027	\$ 43,278	\$ 37,318
<b>Securities</b>			
Trading	64,684	58,067	48,292
Available-for-sale	47,228	55,699	38,823
Equity accounted investments	4,651	3,528	920
	116,563	117,294	88,035
<b>Securities purchased under resale agreements</b>	27,920	17,773	19,451
<b>Loans</b>			
Residential mortgages	120,482	101,604	115,084
Personal and credit cards	62,548	61,048	50,719
Business and government	103,981	106,520	125,503
	287,011	269,172	291,306
Allowance for credit losses	2,787	2,870	2,626
	284,224	266,302	288,680
<b>Other</b>			
Customers' liability under acceptances	7,616	9,583	11,969
Derivative instruments	26,852	25,992	44,810
Land, buildings and equipment	2,450	2,372	2,449
Other assets	15,005	13,922	14,913
	51,923	51,869	74,141
	\$ 526,657	\$ 496,516	\$ 507,625
<b>Liabilities and shareholders' equity</b>			
<b>Deposits</b>			
Personal	\$ 128,850	\$ 123,762	\$ 118,919
Business and government	210,687	203,594	200,566
Banks	22,113	23,063	27,095
	361,650	350,419	346,580
<b>Other</b>			
Acceptances	7,616	9,583	11,969
Obligations related to securities sold under repurchase agreements	40,286	36,568	36,506
Obligations related to securities sold short	21,519	14,688	11,700
Derivative instruments	31,990	28,806	42,811
Other liabilities	28,947	24,682	31,063
	130,358	114,327	134,049
<b>Subordinated debentures</b>	5,939	5,944	4,352
<b>Capital instrument liabilities</b>	500	500	500
<b>Shareholders' equity</b>			
Preferred shares	3,975	3,710	2,860
Common shareholders' equity			
Common shares and contributed surplus	5,775	4,946	3,829
Retained earnings	21,932	19,916	18,549
Accumulated other comprehensive income (loss)	(4,051)	(3,800)	(3,596)
Total common shareholders' equity	23,656	21,062	18,782
Total equity attributable to equity holders of the Bank	27,631	24,772	21,642
Non-controlling interests	579	554	502
Total shareholders' equity	28,210	25,326	22,144
	\$ 526,657	\$ 496,516	\$ 507,625

## T79A Consolidated Statement of Income – CGAAP

For the year ended October 31 (\$ millions)	CGAAP		
	2010	2009	2008
<b>Interest income</b>			
Loans	\$ 12,171	\$ 13,973	\$ 15,832
Securities	4,227	4,090	4,615
Securities purchased under resale agreements	201	390	786
Deposits with banks	292	482	1,083
	16,891	18,935	22,316
<b>Interest expense</b>			
Deposits	6,768	8,339	12,131
Subordinated debentures	289	285	166
Capital instrument liabilities	37	37	37
Other	1,176	1,946	2,408
	8,270	10,607	14,742
Net interest income	8,621	8,328	7,574
Provision for credit losses	1,239	1,744	630
Net interest income after provision for credit losses	7,382	6,584	6,944
Other income	6,884	6,129	4,302
Net interest and other income	14,266	12,713	11,246
<b>Non-interest expenses</b>			
Salaries and employee benefits	4,647	4,344	4,109
Other	3,535	3,575	3,187
	8,182	7,919	7,296
Income before income taxes	6,084	4,794	3,950
Provision for income taxes	1,745	1,133	691
Net income	\$ 4,339	\$ 3,661	\$ 3,259
Net income attributable to non-controlling interests	\$ 100	\$ 114	\$ 119
Net income attributable to equity holders of the Bank	4,239	3,547	3,140
Preferred shareholders	201	186	107
Common shareholders	\$ 4,038	\$ 3,361	\$ 3,033
Average number of common shares outstanding (millions)			
Basic	1,032	1,013	987
Diluted	1,034	1,016	993
Earnings per common share (in dollars) <sup>(1)</sup>			
Basic	\$ 3.91	\$ 3.32	\$ 3.07
Diluted	\$ 3.91	\$ 3.31	\$ 3.05
Dividends per common share (in dollars)	\$ 1.96	\$ 1.96	\$ 1.92

(1) The calculation of earnings per share is based on full dollar and share amounts.

**T80** Consolidated Statement of Changes in Equity

For the year ended October 31 (\$ millions)	IFRS							
	2018	2017	2016	2015	2014	2013	2012	2011
<b>Common shares</b>								
Balance at beginning of year	\$ 15,644	\$ 15,513	\$ 15,141	\$ 15,231	\$ 14,516	\$ 13,139	\$ 8,336	\$ 5,750
Issued	2,708	313	391	104	771	1,377	4,803	2,586
Purchased for cancellation	(118)	(182)	(19)	(194)	(56)	—	—	—
Balance at end of year	\$ 18,234	\$ 15,644	\$ 15,513	\$ 15,141	\$ 15,231	\$ 14,516	\$ 13,139	\$ 8,336
<b>Retained earnings</b>								
Balance at beginning of year	38,117	34,752	31,316	28,609	25,315	21,978	18,421	21,932
IFRS adjustment	(564) <sup>(1)</sup>	—	—	—	(247)	(203)	(144)	(6,248)
Restated balances	37,553	34,752	31,316	28,609	25,068	21,775	18,277	15,684
Net income attributable to common shareholders of the Bank <sup>(2)</sup>	8,361	7,876	6,987	6,897	6,916	6,162	5,974	4,965
Dividends: Preferred <sup>(3)</sup>	(3,985)	(3,668)	(3,468)	(3,289)	(3,110)	(2,858)	(2,493)	(2,200)
Common	(514)	(827)	(61)	(761)	(264)	—	—	—
Purchase of shares for cancellation and premium on redemption	(1)	(16)	(22)	(140) <sup>(4)</sup>	(1)	(11)	17	(28)
Other	—	—	—	—	—	—	—	—
Balance at end of year	\$ 41,414	\$ 38,117	\$ 34,752	\$ 31,316	\$ 28,609	\$ 25,068	\$ 21,775	\$ 18,421
<b>Accumulated other comprehensive income (loss)</b>								
Balance at beginning of year	1,577	2,240	2,455	949	545	(31)	(497)	(4,051)
IFRS adjustment	51 <sup>(1)</sup>	—	—	—	(157)	(714)	32	4,320
Restated balances	1,628	2,240	2,455	949	388	(745)	(465)	269
Cumulative effect of adopting new accounting policies	—	—	—	(5) <sup>(5)</sup>	—	—	—	—
Other comprehensive income (loss)	(693)	(663)	(215)	1,511	561	1,133	(280)	(766)
Other	57	—	—	—	—	—	—	—
Balance at end of year	\$ 992	\$ 1,577	\$ 2,240	\$ 2,455	\$ 949	\$ 388	\$ (745)	\$ (497)
<b>Other reserves<sup>(7)</sup></b>								
Balance at beginning of year	116	152	173	176	193	166	96	25
Share-based payments <sup>(8)</sup>	6	8	7	14	30	36	38	46
Other	282	(44)	(28)	(17)	(47)	(9)	32	25
Balance at end of year	\$ 404	\$ 116	\$ 152	\$ 173	\$ 176	\$ 193	\$ 166	\$ 96
<b>Total common equity</b>	\$ 61,044	\$ 55,454	\$ 52,657	\$ 49,085	\$ 44,965	\$ 40,165	\$ 34,335	\$ 26,356
<b>Preferred shares and other equity instruments</b>								
Balance at beginning of year	4,579	3,594	2,934	2,934	4,084	4,384	4,384	3,975
Net income attributable to preferred shareholders and other equity instrument holders of the Bank <sup>(2)</sup>	187	129	130	117	155	217	220	216
Preferred and other equity instrument dividends <sup>(3)</sup>	(187)	(129)	(130)	(117)	(155)	(217)	(220)	(216)
Issued	300	1,560	1,350	—	—	—	—	409
Redeemed	(695)	(575)	(690)	—	(1,150)	(300)	—	—
Balance at end of year	\$ 4,184	\$ 4,579	\$ 3,594	\$ 2,934	\$ 2,934	\$ 4,084	\$ 4,384	\$ 4,384
<b>Non-controlling interests</b>								
Balance at beginning of year	1,592	1,570	1,460	1,312	1,155	1,743	1,500	579
IFRS adjustment	(97) <sup>(1)</sup>	—	—	—	(17)	(797)	(891)	936
Restated balances	1,495	1,570	1,460	1,312	1,138	946	609	1,515
Net income attributable to non-controlling interests	176	238	251	199	227	231	196	149
Distributions to non-controlling interests	(199)	(133)	(116)	(86)	(76)	(80)	(44)	(181)
Effect of foreign exchange and others	980	(83)	(25)	35	23	41	185	17
Balance at end of year	\$ 2,452	\$ 1,592	\$ 1,570	\$ 1,460	\$ 1,312	\$ 1,138	\$ 946	\$ 1,500
<b>Total equity at end of year</b>	\$ 67,680	\$ 61,625	\$ 57,821	\$ 53,479	\$ 49,211	\$ 45,387	\$ 39,665	\$ 32,240

- (1) Refer to Note 4 in the consolidated financial statements.
- (2) Under CGAAP, net income attributable to preferred shareholders was included in retained earnings.
- (3) Under IFRS, preferred dividends are recorded as a reduction to preferred shareholders' equity. Under CGAAP, dividends are a reduction to retained earnings.
- (4) Includes retrospective adjustments primarily related to foreign currency translation on Allowance for Credit Losses with respect to periods prior to 2013 (\$152).
- (5) To reflect the adoption of the own credit risk provisions of IFRS 9 pertaining to financial liabilities designated at fair value through profit or loss.
- (6) Relates to the adoption of the new accounting standard for impairment and classification of financial instruments under CGAAP.
- (7) Under CGAAP, amounts represent Contributed Surplus.
- (8) Represents amounts on account of share-based payments (refer to Note 26 in the consolidated financial statements).

**T81** Consolidated Statement of Comprehensive Income

For the year ended October 31 (\$ millions)	IFRS							
	2018	2017	2016	2015	2014	2013	2012	2011
<b>Net income</b>	\$ 8,724	\$ 8,243	\$ 7,368	\$ 7,213	\$ 7,298	\$ 6,610	\$ 6,390	\$ 5,330
<b>Other comprehensive income (loss), net of income taxes:</b>								
Items that will be reclassified subsequently to net income								
Net change in unrealized foreign currency translation gains (losses)	(606)	(1,259)	396	1,855	889	346	149	(697)
Net change in unrealized gains (losses) on available-for-sale securities (debt and equity) <sup>(1)</sup>	n/a	(55)	(172)	(480)	(38)	110	151	(169)
Net change in fair value due to change in debt instruments measured at fair value through other comprehensive income <sup>(1)</sup>	(252)	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Net change in gains (losses) on derivative instruments designated as cash flow hedges	(361)	(28)	258	55	(6)	93	116	105
Other comprehensive income (loss) from investments in associates	66	56	31	(9)	60	20	25	—
Items that will not be reclassified subsequently to net income								
Net change in remeasurement of employee benefit plan asset and liability	318	592	(716)	(1)	(320)	563	(747)	—
Net change in fair value due to change in equity instruments designated at fair value through other comprehensive income <sup>(1)</sup>	60	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Net change in fair value due to change in own credit risk on financial liabilities designated under the fair value option <sup>(2)</sup>	(22)	(21)	(16)	15	n/a	n/a	n/a	n/a
Other comprehensive income (loss) from investments in associates	(7)	6	(10)	1	(2)	—	—	—
<b>Other comprehensive income (loss)</b>	(804)	(709)	(229)	1,436	583	1,132	(306)	(761)
<b>Comprehensive income</b>	\$ 7,920	\$ 7,534	\$ 7,139	\$ 8,649	\$ 7,881	\$ 7,742	\$ 6,084	\$ 4,569
<b>Comprehensive income attributable to:</b>								
Common shareholders of the Bank	\$ 7,668	\$ 7,213	\$ 6,772	\$ 8,408	\$ 7,477	\$ 7,298	\$ 5,694	\$ 4,199
Preferred shareholders and other equity instrument holders of the Bank	187	129	130	117	155	217	220	216
Non-controlling interests in subsidiaries	65	192	237	124	249	227	170	96
Capital instrument equity holders	—	—	—	—	—	—	—	58
<b>Total comprehensive income</b>	\$ 7,920	\$ 7,534	\$ 7,139	\$ 8,649	\$ 7,881	\$ 7,742	\$ 6,084	\$ 4,569

- (1) The amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Notes 3 and 4 in the consolidated financial statements).
- (2) In accordance with the transition requirements for the own credit risk provisions of IFRS 9, prior year comparatives have not been restated for the adoption of this standard in 2015.

CGAAP		
2010	2009	2008
\$ 4,946	\$ 3,829	\$ 3,566
804	1,117	266
-	-	(3)
\$ 5,750	\$ 4,946	\$ 3,829
19,916	18,549	17,460
-	-	-
19,916	18,549	17,460
4,239	3,547	3,140
(201)	(186)	(107)
(2,023)	(1,990)	(1,896)
-	-	(37)
1	(4)	(11)
\$ 21,932	\$ 19,916	\$ 18,549
(3,800)	(3,596)	(3,857)
-	-	-
(3,800)	(3,596)	(3,857)
-	595 <sup>(6)</sup>	-
(251)	(799)	261
-	-	-
\$ (4,051)	\$ (3,800)	\$ (3,596)
-	-	-
25	-	-
-	-	-
\$ 25	\$ -	\$ -
\$ 23,656	\$ 21,062	\$ 18,782
3,710	2,860	1,635
-	-	-
265	850	1,225
-	-	-
\$ 3,975	\$ 3,710	\$ 2,860
554	502	n/a
-	-	-
554	502	n/a
100	114	n/a
(35)	(36)	n/a
(40)	(26)	n/a
\$ 579	\$ 554	\$ 502
\$ 28,210	\$ 25,326	\$ 22,144

CGAAP		
2010	2009	2008
\$ 4,339	\$ 3,661	\$ 3,259
(591)	(1,736)	2,368
278	894	(1,588)
n/a	n/a	n/a
62	43	(519)
-	-	-
-	-	-
n/a	n/a	n/a
n/a	n/a	n/a
-	-	-
(251)	(799)	261
\$ 4,088	\$ 2,862	\$ 3,520
\$ 3,787	\$ 2,562	\$ 3,294
201	186	107
100	114	119
-	-	-
\$ 4,088	\$ 2,862	\$ 3,520

## T82 Other statistics

For the year ended October 31	IFRS							
	2018 <sup>(1)</sup>	2017	2016	2015	2014	2013	2012	2011
<b>Operating performance</b>								
Basic earnings per share (\$)	6.90	6.55	5.80	5.70	5.69	5.15	5.27	4.63
Diluted earnings per share (\$)	6.82	6.49	5.77	5.67	5.66	5.11	5.18	4.53
Return on equity (%)	14.5	14.6	13.8	14.6	16.1	16.6	19.9	20.3
Productivity ratio (%)	52.3	53.9	55.2	54.2	53.4	54.8	53.1	54.8
Return on assets (%)	0.92	0.90	0.81	0.84	0.92	0.88	0.97	0.91
Core banking margin (%) <sup>(2)</sup>	2.46	2.46	2.38	2.39	2.39	2.31	2.31	2.32
Net interest margin on total average assets (%)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
<b>Capital measures<sup>(3)</sup></b>								
Common Equity Tier 1 (CET1) capital ratio (%)	11.1	11.5	11.0	10.3	10.8	9.1	n/a	n/a
Tier 1 capital ratio (%)	12.5	13.1	12.4	11.5	12.2	11.1	13.6	12.2
Total capital ratio (%)	14.3	14.9	14.6	13.4	13.9	13.5	16.7	13.9
Leverage ratio (%)	4.5	4.7	4.5	4.2	n/a	n/a	n/a	n/a
<b>Common share information</b>								
Closing share price (\$) (TSX)	70.65	83.28	72.08	61.49	69.02	63.39	54.25	52.53
Number of shares outstanding (millions)	1,227	1,199	1,208	1,203	1,217	1,209	1,184	1,089
Dividends paid per share (\$)	3.28	3.05	2.88	2.72	2.56	2.39	2.19	2.05
Dividend yield (%) <sup>(4)</sup>	4.2	4.0	4.7	4.4	3.8	4.1	4.2	3.7
Price to earnings multiple (trailing 4 quarters)	10.2	12.7	12.4	10.8	12.1	12.3	10.3	11.3
Book value per common share (\$)	49.75	46.24	43.59	40.80	36.96	33.23	28.99	24.20
<b>Other information</b>								
Average total assets (\$ millions)	945,683	912,619	913,844	860,607	795,641	748,901	659,538	586,101
Number of branches and offices	3,095	3,003	3,113	3,177	3,288	3,330	3,123	2,926
Number of employees	97,629	88,645	88,901	89,214	86,932	86,690	81,497	75,362
Number of automated banking machines	9,029	8,140	8,144	8,191	8,732	8,471	7,341	6,260

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

(2) Refer to page 18 for a discussion of non-GAAP measures.

(3) Effective November 1, 2012, regulatory capital ratios are determined in accordance with Basel III rules as an all-in basis. Comparative amounts for periods 2012-2008 were determined in accordance with Basel II rules.

(4) Based on the average of the high and low common share price for the year.

CGAAP		
2010	2009	2008
3.91	3.32	3.07
3.91	3.31	3.05
18.3	16.7	16.7
52.8	54.8	61.4
0.84	0.71	0.72
n/a	n/a	n/a
1.67	1.62	1.66
n/a	n/a	n/a
11.8	10.7	9.3
13.8	12.9	11.1
n/a	n/a	n/a
54.67	45.25	40.19
1,043	1,025	992
1.96	1.96	1.92
3.9	5.4	4.3
14.0	13.6	13.1
22.68	20.55	18.94
515,991	513,149	455,539
2,784	2,686	2,672
70,772	67,802	69,049
5,978	5,778	5,609

## Management's Report on Internal Control Over Financial Reporting

The management of The Bank of Nova Scotia (the Bank) is responsible for establishing and maintaining adequate internal control over financial reporting, and have designed such internal control over financial reporting to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with International Financial Reporting Standards as issued by The International Accounting Standards Board.

Management has used the Internal Control – Integrated Framework (2013) to evaluate the effectiveness of internal control over financial reporting, which is a recognized and suitable framework developed by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management has evaluated the design and operation of the Bank's internal control over financial reporting as of October 31, 2018, and has concluded that such internal control over financial reporting is effective. There are no material weaknesses that have been identified by management in this regard.

KPMG LLP, the independent auditors appointed by the shareholders of the Bank, who have audited the consolidated financial statements, have also audited internal control over financial reporting and have issued their report below.

Brian J. Porter  
President and Chief Executive Officer

Raj Viswanathan  
Executive Vice President and Chief Financial Officer

Toronto, Canada  
November 27, 2018

## Report of Independent Registered Public Accounting Firm

To the Shareholders of The Bank of Nova Scotia

We have audited The Bank of Nova Scotia's (the "Bank") internal control over financial reporting as of October 31, 2018, based on the criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Bank maintained, in all material respects, effective internal control over financial reporting as of October 31, 2018, based on the criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

### Report on the Consolidated Financial Statements

We also have audited, in accordance with Canadian generally accepted auditing standards and the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the consolidated financial statements of the Bank, which comprise the consolidated statements of financial position as at October 31, 2018 and October 31, 2017, the consolidated statements of income, comprehensive income, changes in equity and cash flows for each of the years in the three year period ended October 31, 2018, and the related notes, comprising a summary of significant accounting policies and other explanatory information (collectively referred to as the "consolidated financial statements"), and our report dated November 27, 2018 expressed an unmodified (unqualified) opinion on those consolidated financial statements.

### Basis for Opinion

The Bank's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying "Management's Report on Internal Control over Financial Reporting". Our responsibility is to express an opinion on the Bank's internal control over financial reporting based on our audit.

We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Bank in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB and in accordance with the ethical requirements that are relevant to our audit of the financial statements in Canada.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

### Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

The logo for KPMG LLP, featuring the letters "KPMG" in a large, bold, sans-serif font, with "LLP" in a smaller font to the right. A horizontal line is drawn underneath the text.

Chartered Professional Accountants, Licensed Public Accountants

November 27, 2018

## Glossary

**Allowance for Credit Losses:** An allowance set aside which, in management's opinion, is adequate to absorb all incurred credit-related losses in the Bank's portfolio of loans. It includes individual and collective allowances.

**Assets Under Administration (AUA):** Assets administered by the Bank which are beneficially owned by clients and therefore not reported on the Bank's Consolidated Statement of Financial Position. Services provided for AUA are of an administrative nature, such as trusteeship, custodial, safekeeping, income collection and distribution, securities trade settlements, customer reporting, and other similar services.

**Assets Under Management (AUM):** Assets managed by the Bank on a discretionary basis and in respect of which the Bank earns investment management fees. AUM are beneficially owned by clients and are therefore not reported on the Bank's Consolidated Statement of Financial Position. Some AUM are also administered assets and are therefore included in assets under administration.

**Bankers' Acceptances (BAs):** Negotiable, short-term debt securities, guaranteed for a fee by the issuer's bank.

**Basis Point:** A unit of measure defined as one-hundredth of one per cent.

**Capital:** Consists of common shareholders' equity, non-cumulative preferred shares and other equity instruments, capital instruments and subordinated debentures. It can support asset growth, provide against loan losses and protect depositors.

**Common Equity Tier 1 (CET1), Tier 1 and Total Capital Ratios:** Under Basel III, there are three primary regulatory capital ratios used to assess capital adequacy, CET1, Tier 1 and Total capital ratios, which are determined by dividing those capital components by their respective risk-weighted assets.

Basel III introduced a new category of capital, CET1, which consists primarily of common shareholders' equity net of regulatory adjustments. These regulatory adjustments include goodwill, intangible assets net of deferred tax liabilities, deferred tax assets that rely on future probability, defined-benefit pension fund net assets, shortfall of credit provision to expected losses and significant investments in common equity of other financial institutions.

Tier 1 includes CET1 and additional Tier 1 capital which consists primarily of qualifying non-cumulative preferred shares, non-cumulative subordinated additional Tier 1 capital securities and non-qualifying instruments subject to phase-out. Tier 2 capital consists mainly of qualifying subordinated or non-qualifying debentures subject to phase-out and the eligible allowances for credit losses.

Total capital is comprised of CET1 capital, Tier 1 capital and Tier 2 capital.

**Core Banking Margin:** This ratio represents net interest income on average earning assets excluding bankers acceptances and total average assets relating to the Global Capital markets business within Global Banking and Markets. This is consistent with the fact that net interest from trading operations is recorded in trading revenues included in non-interest income.

**Covered Bonds:** Debt obligations of the Bank for which the payment of all amounts of interest and principal are unconditionally and irrevocably guaranteed by a limited partnership or trust and secured by a pledge of the covered bond portfolio. The assets in the covered bond portfolio held by the limited partnership or trust consist of first lien Canadian uninsured residential mortgages or first lien Canadian residential mortgages insured under CMHC Mortgage Insurance, respectively, and their related security interest.

**Derivative Products:** Financial contracts whose value is derived from an underlying price, interest rate, exchange rate or price index. Forwards, options and swaps are all derivative instruments.

**Fair Value:** 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.

**Foreign Exchange Contracts:** Commitments to buy or sell a specified amount of foreign currency on a set date and at a predetermined rate of exchange.

**Forward Rate Agreement (FRA):** A contract between two parties, whereby a designated interest rate, applied to a notional principal amount, is locked in for a specified period of time. The difference between the contracted rate and prevailing market rate is paid in cash on the settlement date. These agreements are used to protect against, or take advantage of, future interest rate movements.

**Futures:** Commitments to buy or sell designated amounts of commodities, securities or currencies on a specified date at a predetermined price. Futures are traded on recognized exchanges. Gains and losses on these contracts are settled daily, based on closing market prices.

**Hedging:** Protecting against price, interest rate or foreign exchange exposures by taking positions that are expected to react to market conditions in an offsetting manner.

**Impaired Loans:** Loans on which the Bank no longer has reasonable assurance as to the timely collection of interest and principal, or where a contractual payment is past due for a prescribed period or the customer is declared to be bankrupt. Excludes Federal Deposit Insurance Corporation (FDIC) guaranteed loans.

**Leverage Ratio:** The 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 OSFI Leverage Requirements Guideline.

**Liquidity Coverage Ratio (LCR):** The ratio of high quality liquid assets to stressed net cash outflows over a 30 calendar day time horizon, as defined within the OSFI Liquidity Adequacy Requirements Guideline.

**Marked-To-Market:** The valuation of certain financial instruments at fair value as of the Consolidated Statement of Financial Position date.

**Notional Principal Amounts:** The contract or principal amounts used to determine payments for certain off-balance sheet instruments and derivatives, such as FRAs, interest rate swaps and cross-currency swaps. The amounts are termed "notional" because they are not usually exchanged themselves, serving only as the basis for calculating amounts that do change hands.

**Off-Balance Sheet Instruments:** These are indirect credit commitments, including undrawn commitments to extend credit and derivative instruments.

**Operating Leverage:** This financial metric measures the rate of growth in total revenue less the rate of growth in operating expenses.

**Options:** Contracts between buyer and seller giving the buyer of the option the right, but not the obligation, to buy (call) or sell (put) a specified commodity, financial instrument or currency at a set price or rate on or before a specified future date.

**OSFI:** The Office of the Superintendent of Financial Institutions Canada, the regulator of Canadian banks.

**Pacific Alliance:** Comprises the countries of Chile, Colombia, Mexico and Peru.

**Productivity Ratio:** Management uses the productivity ratio as a measure of the Bank's efficiency. This ratio represents operating expenses as a percentage of total revenue. A lower ratio indicates improved productivity.

**Repos:** Repos is short for "obligations related to securities sold under repurchase agreements" – a short-term transaction where the Bank sells assets, normally government bonds, to a client and simultaneously agrees to repurchase them on a specified date and at a specified price. It is a form of short-term funding.

**Return on Equity (ROE):** Net income attributable to common shareholders, expressed as a percentage of average common shareholders' equity. With respect to the Bank's main business segments, the Bank attributes capital that approximates 9.5% of Basel III common equity capital requirements based on credit, market and operational risks and leverage inherent in 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.

**Reverse Repos:** Reverse repos is short for "securities purchased under resale agreements" – a short-term transaction where the Bank purchases assets, normally government bonds, from a client and

simultaneously agrees to resell them on a specified date and at a specified price. It is a form of short-term collateralized lending.

**Risk-Weighted Assets:** Comprised of three broad categories including credit risk, market risk and operational risk, which are computed under the Basel III Framework. Risk-weighted assets for credit risk are calculated using formulas specified by the Basel III Framework. The formulas are based on the degree of credit risk for each class of counterparty. Off-balance sheet instruments are converted to on balance sheet equivalents, using specified conversion factors, before the appropriate risk measurements are applied. The Bank uses both internal models and standardized approaches to calculate market risk capital and operational risk capital. These capital requirements are converted to risk weighted assets equivalent by multiplying by a 12.5 factor.

**Securitization:** The process by which financial assets (typically loans) are transferred to a trust, which normally issues a series of different classes of asset-backed securities to investors to fund the purchase of loans.

**Structured Entities:** A structured entity is defined as an entity created to accomplish a narrow and well-defined objective. A structured entity may take the form of a corporation, trust, partnership or unincorporated entity. Structured entities are often created with legal arrangements that impose strict and sometimes permanent limits on the decision-making powers of their governing board, trustee or management over the operations of the entity.

**Standby Letters of Credit and Letters of Guarantee:** Written undertakings by the Bank, at the request of the customer, to provide assurance of payment to a third-party regarding the customer's obligations and liabilities to that third-party.

**Structured Credit Instruments:** A wide range of financial products which includes Collateralized Debt Obligations, Collateralized Loan

## Basel III Glossary

### Credit Risk Parameters

**Exposure at Default (EAD):** Generally represents the expected gross exposure – outstanding amount for on-balance sheet exposure and loan equivalent amount for off-balance sheet exposure at default.

**Probability of Default (PD):** Measures the likelihood that a borrower will default within a one-year time horizon, expressed as a percentage.

**Loss Given Default (LGD):** Measures the severity of loss on a facility in the event of a borrower's default, expressed as a percentage of exposure at default.

### Exposure Types

#### Non-retail

**Corporate:** Defined as a debt obligation of a corporation, partnership, or proprietorship.

**Bank:** Defined as a debt obligation of a bank or bank equivalent (including certain public sector entities (PSEs) treated as bank equivalent exposures).

**Sovereign:** Defined as a debt obligation of a sovereign, central bank, certain multi development banks and certain PSEs treated as sovereign.

**Securitization:** On-balance sheet investments in asset-backed securities, mortgage-backed securities, collateralized loan obligations and collateralized debt obligations, off-balance sheet liquidity lines to the Bank's own sponsored and third-party conduits and credit enhancements.

#### Retail

**Residential Mortgage:** Loans to individuals against residential property (four units or less).

**Secured Lines Of Credit:** Revolving personal lines of credit secured by residential real estate.

**Qualifying Revolving Retail Exposures:** Credit cards and unsecured lines of credit for individuals.

**Other Retail:** All other personal loans.

### Exposure Sub-types

**Drawn:** Outstanding amounts for loans, leases, acceptances, deposits with banks and FVOCI debt securities.

**Undrawn:** Utilized portion of authorized committed credit lines.

Obligations, Structured Investment Vehicles, and Asset-Backed Securities. These instruments represent investments in pools of credit-related assets, whose values are primarily dependent on the performance of the underlying pools.

**Swaps:** Interest rate swaps are agreements to exchange streams of interest payments, typically one at a floating rate, the other at a fixed rate, over a specified period of time, based on notional principal amounts. Cross-currency swaps are agreements to exchange payments in different currencies over predetermined periods of time.

**Taxable Equivalent Basis (TEB):** The Bank analyzes net interest income, non-interest income, and total revenue on a taxable equivalent basis (TEB). 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. For purposes of segmented reporting, 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.

**Value At Risk (VaR):** An estimate of the potential loss that might result from holding a position for a specified period of time, with a given level of statistical confidence.

**Yield Curve:** A graph showing the term structure of interest rates, plotting the yields of similar quality bonds by term to maturity.

### Other Exposures

**Repo-Style Transactions:** Reverse repurchase agreements (reverse repos) and repurchase agreements (repos), securities lending and borrowing.

**OTC Derivatives:** Over-the-counter derivatives contracts refers to financial instruments which are traded through a dealer network rather than through an exchange.

**Other Off-balance Sheet:** Direct credit substitutes, such as standby letters of credit and guarantees, trade letters of credit, and performance letters of credit and guarantees.

**Exchange-Traded Derivative Contracts:** Exchange-traded derivative contracts are derivative contracts (e.g., futures contracts and options) that are transacted on an organized futures exchange. These include futures contracts (both long and short positions), purchased options and written options.

**Qualifying Central Counterparty (QCCP):** A licensed central counterparty is considered "qualifying" when it is compliant with the International Organization of Securities Commissions (IOSCO) standards and is able to assist clearing member banks in properly capitalizing for CCP exposures.

**Asset Value Correlation Multiplier (AVC):** Basel III has increased the risk-weights on exposures to certain Financial Institutions (FIs) relative to the non-financial corporate sector by introducing an AVC. The correlation factor in the risk-weight formula is multiplied by this AVC factor of 1.25 for all exposures to regulated FIs whose total assets are greater than or equal to US \$100 billion and all exposures to unregulated FIs.

**Specific Wrong-Way Risk (WWR):** Specific Wrong-Way Risk arises when the exposure to a particular counterparty is positively correlated with the probability of default of the counterparty due to the nature of the transactions with the counterparty.

**Basel II Regulatory Capital Floor:** Since the introduction of Basel II in 2008, OSFI has prescribed a minimum regulatory capital floor for institutions that use the advanced internal ratings-based approach for credit risk. Effective Q2 2018, the Basel II capital floor add-on is determined by comparing a capital requirement calculated by reference to the Basel II standardized approach for credit risk. Revised Basel II capital floor requirements also include risk-weighted assets for market risk and CVA. A shortfall in the Basel III capital requirement as compared with the Basel II floor is added to RWA.