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Management's Responsibility for Financial Information

The management of The Bank of Nova Scotia (the Bank) is responsible for the integrity and fair presentation of the financial information contained in this Annual Report. The consolidated financial statements have been prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board. The consolidated financial statements also comply with the accounting requirements of the Bank Act.

The consolidated financial statements, where necessary, include amounts which are based on the best estimates and judgment of management. Financial information presented elsewhere in this Annual Report is consistent with that shown in the consolidated financial statements.

Management has always recognized the importance of the Bank maintaining and reinforcing the highest possible standards of conduct in all of its actions, including the preparation and dissemination of statements fairly presenting the financial condition of the Bank. In this regard, management has developed and maintains a system of accounting and reporting which provides for the necessary internal controls to ensure that transactions are properly authorized and recorded, assets are safeguarded against unauthorized use or disposition, and liabilities are recognized. The system is augmented by written policies and procedures, the careful selection and training of qualified staff, the establishment of organizational structures providing an appropriate and well-defined division of responsibilities, and the communication of policies and guidelines of Scotiabank's Code of Conduct throughout the Bank.

Management, under the supervision of and the participation of the President and Chief Executive Officer and the Executive Vice President and Chief Financial Officer, have a process in place to evaluate disclosure controls and procedures and internal control over financial reporting in line with Canadian and U.S. securities regulations.

The system of internal controls is further supported by a professional staff of internal auditors who conduct periodic audits of all aspects of the Bank's operations. As well, the Bank's Chief Auditor has full and free access to, and meets periodically with the Audit and Conduct Review Committee of the Board of Directors. In addition, the Bank's compliance function maintains policies, procedures and programs directed at ensuring compliance with regulatory requirements, including conflict of interest rules.

The Office of the Superintendent of Financial Institutions Canada, which is mandated to protect the rights and interests of the depositors and creditors of the Bank, examines and enquires into the business and affairs of the Bank, as deemed necessary, to determine whether the provisions of the Bank Act are being complied with, and that the Bank is in a sound financial condition.

The Audit and Conduct Review Committee, composed entirely of outside directors, reviews the consolidated financial statements with both management and the independent auditors before such statements are approved by the Board of Directors and submitted to the shareholders of the Bank.

The Audit and Conduct Review Committee reviews and reports its findings to the Board of Directors on all related party transactions that may have a material impact on the Bank.

KPMG LLP, the independent auditors appointed by the shareholders of the Bank, have audited the consolidated financial position of the Bank as at October 31, 2018 and October 31, 2017 and its consolidated financial performance and its consolidated cash flows for each of the years in the three-year period ended October 31, 2018 prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board in accordance with Canadian Generally Accepted Auditing Standards and the standards of the Public Company Accounting Oversight Board (United States) and the effectiveness of internal control over financial reporting and have expressed their opinions upon completion of such audits in the following report to the shareholders. The Shareholders' Auditors have full and free access to, and meet periodically with, the Audit and Conduct Review Committee to discuss their audits, including any findings as to the integrity of the Bank's accounting, financial reporting and related matters.

Brian J. Porter
President and Chief Executive Officer

Raj Viswanathan
Executive Vice President and Chief Financial Officer

Toronto, Canada
November 27, 2018

Independent Auditors' Report of Registered Public Accounting Firm

To the Shareholders of The Bank of Nova Scotia

We have audited the accompanying consolidated financial statements of The Bank of Nova Scotia (the "Bank"), which comprise the consolidated statements of financial position as at October 31, 2018 and October 31, 2017, the consolidated statements of income, comprehensive income, changes in equity and cash flows for each of the years in the three-year period ended October 31, 2018, and the related notes, comprising a summary of significant accounting policies and other explanatory information (collectively referred to as the "consolidated financial statements").

In our opinion, the consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Bank as at October 31, 2018 and October 31, 2017, and its consolidated financial performance and its consolidated cash flows for each of the years in the three-year period ended October 31, 2018 in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board.

Change in Accounting Principle

Without qualifying our opinion on the consolidated financial statements, we draw attention to Note 4 to the consolidated financial statements, which indicates that the Bank has changed its method of accounting for financial instruments in 2018 due to the adoption of International Financial Reporting Standard 9 Financial Instruments.

Report on Internal Control Over Financial Reporting

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Bank's internal control over financial reporting as of October 31, 2018, based on the criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report dated November 27, 2018 expressed an unqualified (unmodified) opinion on the effectiveness of the Bank's internal control over financial reporting.

Basis for Opinion

A – Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

B – Auditors' Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We conducted our audits in accordance with Canadian generally accepted auditing standards and the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement, whether due to error or fraud. Those standards also require that we comply with ethical requirements, including independence. We are required to be independent with respect to the Bank in accordance with the ethical requirements that are relevant to our audit of the consolidated financial statements in Canada, the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB. We are a public accounting firm registered with the PCAOB.

An audit includes performing procedures to assess the risks of material misstatements of the consolidated financial statements, whether due to error or fraud, and performing procedures to respond to those risks. Such procedures included obtaining and examining, on a test basis, audit evidence regarding the amounts and disclosures in the consolidated financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the Bank's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances.

An audit also includes evaluating the appropriateness of accounting policies and principles used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained in our audits is sufficient and appropriate to provide a reasonable basis for our audit opinion.

Chartered Professional Accountants, Licensed Public Accountants

We have served as the Bank's auditor since 2006 and as joint auditor for the prior 14 years.

November 27, 2018

Consolidated Statement of Financial Position

As at October 31 ($ millions)	Note	**2018[1]**	2017
Assets			
Cash and deposits with financial institutions	6	**$ 62,269**	$ 59,663
Precious metals		**3,191**	5,717
Trading assets			
Securities	8(a)	**85,474**	78,652
Loans	8(b)	**14,334**	17,312
Other		**454**	2,500
		100,262	98,464
Financial instruments designated at fair value through profit or loss	9	**12**	13
Securities purchased under resale agreements and securities borrowed		**104,018**	95,319
Derivative financial instruments	10	**37,558**	35,364
Investment securities	12	**78,396**	69,269
Loans			
Residential mortgages	13	**253,357**	236,916
Personal loans	13	**96,019**	89,227
Credit cards	13	**16,485**	14,104
Business and government	13	**191,038**	168,449
		556,899	508,696
Allowance for credit losses	13(e)	**5,065**	4,327
		551,834	504,369
Other			
Customers' liability under acceptances, net of allowance		**16,329**	13,560
Property and equipment	16	**2,684**	2,381
Investments in associates	17	**4,850**	4,586
Goodwill and other intangible assets	18	**17,719**	12,106
Deferred tax assets	27(c)	**1,938**	1,713
Other assets	19	**17,433**	12,749
		60,953	47,095
		$ 998,493	$ 915,273
Liabilities			
Deposits			
Personal	20	**$ 214,545**	$ 200,030
Business and government	20	**422,002**	384,988
Financial institutions	20	**39,987**	40,349
		676,534	625,367
Financial instruments designated at fair value through profit or loss	9	**8,188**	4,663
Other			
Acceptances		**16,338**	13,560
Obligations related to securities sold short		**32,087**	30,766
Derivative financial instruments	10	**37,967**	34,200
Obligations related to securities sold under repurchase agreements and securities lent		**101,257**	95,843
Subordinated debentures	21	**5,698**	5,935
Other liabilities	22	**52,744**	43,314
		246,091	223,618
		930,813	853,648
Equity			
Common equity			
Common shares	24(a)	**18,234**	15,644
Retained earnings		**41,414**	38,117
Accumulated other comprehensive income (loss)		**992**	1,577
Other reserves		**404**	116
Total common equity		**61,044**	55,454
Preferred shares and other equity instruments	24(b)	**4,184**	4,579
Total equity attributable to equity holders of the Bank		**65,228**	60,033
Non-controlling interests in subsidiaries	31(b)	**2,452**	1,592
		67,680	61,625
		$ 998,493	$ 915,273

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

Thomas C. O'Neill
Chairman of the Board

Brian J. Porter
President and Chief Executive Officer

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statement of Income

For the year ended October 31 ($ millions)	Note	**2018**	2017	2016
Revenue				
Interest income[1][2]	32			
Loans		**$ 24,991**	$ 21,719	$ 20,419
Securities		**1,771**	1,403	1,237
Securities purchased under resale agreements and securities borrowed		**446**	283	158
Deposits with financial institutions		**859**	522	394
		28,067	23,927	22,208
Interest expense	32			
Deposits		**10,544**	7,878	6,793
Subordinated debentures		**214**	226	232
Other		**1,118**	788	891
		11,876	8,892	7,916
Net interest income		**16,191**	15,035	14,292
Non-interest income[1]				
Banking	33	**4,001**	3,855	3,669
Wealth management	33	**3,341**	3,318	3,282
Underwriting and other advisory		**514**	598	594
Non-trading foreign exchange		**622**	557	540
Trading revenues[3]	34	**1,420**	986	1,228
Net gain on sale of investment securities	12(g)	**146**	380	534
Net income from investments in associated corporations	17	**559**	407	414
Insurance underwriting income, net of claims		**686**	626	603
Other fees and commissions[3]		**841**	903	732
Other[3]		**454**	490	462
		12,584	12,120	12,058
Total revenue		**28,775**	27,155	26,350
Provision for credit losses[1]	13(e)	**2,611**	2,249	2,412
		26,164	24,906	23,938
Non-interest expenses				
Salaries and employee benefits		**7,455**	7,375	7,025
Premises and technology		**2,577**	2,436	2,238
Depreciation and amortization		**848**	761	684
Communications		**447**	437	442
Advertising and business development		**581**	581	617
Professional		**881**	775	693
Business and capital taxes		**464**	423	403
Other		**1,805**	1,842	2,438
		15,058	14,630	14,540
Income before taxes		**11,106**	10,276	9,398
Income tax expense	27	**2,382**	2,033	2,030
Net income		**$ 8,724**	$ 8,243	$ 7,368
Net income attributable to non-controlling interests in subsidiaries	31(b)	**176**	238	251
Net income attributable to equity holders of the Bank		**$ 8,548**	$ 8,005	$ 7,117
Preferred shareholders and other equity instrument holders		**187**	129	130
Common shareholders		**$ 8,361**	$ 7,876	$ 6,987
Earnings per common share (in dollars)				
Basic	35	**$ 6.90**	$ 6.55	$ 5.80
Diluted	35	**6.82**	6.49	5.77
Dividends paid per common share (in dollars)	24(a)	**3.28**	3.05	2.88

(1) The amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior year amounts have not been restated (refer to Notes 3 and 4).
(2) Interest income on financial assets measured at amortized cost and FVOCI is calculated using the effective interest method. Includes interest income of $27,854 for the year ended October 31, 2018 from these financial assets.
(3) Prior year amounts have been reclassified to conform with current period presentation.

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statement of Comprehensive Income

For the year ended October 31 ($ millions)	2018	2017	2016
Net income	**$ 8,724**	$ 8,243	$ 7,368
Other comprehensive income (loss)			
Items that will be reclassified subsequently to net income			
Net change in unrealized foreign currency translation gains (losses):			
Net unrealized foreign currency translation gains (losses)	**(406)**	(1,564)	614
Net gains (losses) on hedges of net investments in foreign operations	**(281)**	404	(300)
Income tax expense (benefit):			
Net unrealized foreign currency translation gains (losses)	**(7)**	(8)	(3)
Net gains (losses) on hedges of net investments in foreign operations	**(74)**	107	(79)
	(606)	(1,259)	396
Net change in unrealized gains (losses) on available-for-sale securities (debt and equity)[1]:			
Net unrealized gains (losses) on available-for-sale securities	**n/a**	(217)	308
Reclassification of net (gains) losses to net income[2]	**n/a**	143	(549)
Income tax expense (benefit):			
Net unrealized gains (losses) on available-for-sale securities	**n/a**	(61)	82
Reclassification of net (gains) losses to net income	**n/a**	42	(151)
	n/a	(55)	(172)
Net change in fair value due to change in debt instruments measured at fair value through other comprehensive income[1]:			
Net gains (losses) in fair value	**(605)**	n/a	n/a
Reclassification of net (gains) losses to net income	**281**	n/a	n/a
Income tax expense (benefit):			
Net gains (losses) in fair value	**(145)**	n/a	n/a
Reclassification of net (gains) losses to net income	**73**	n/a	n/a
	(252)	n/a	n/a
Net change in gains (losses) on derivative instruments designated as cash flow hedges:			
Net gains (losses) on derivative instruments designated as cash flow hedges	**(1,181)**	1,722	(7)
Reclassification of net (gains) losses[3]	**695**	(1,761)	357
Income tax expense (benefit):			
Net gains (losses) on derivative instruments designated as cash flow hedges	**(307)**	454	9
Reclassification of net (gains) losses to net income	**182**	(465)	83
	(361)	(28)	258
Other comprehensive income (loss) from investments in associates	**66**	56	31
Items that will not be reclassified subsequently to net income			
Net change in remeasurement of employee benefit plan asset and liability:			
Actuarial gains (losses) on employee benefit plans	**444**	805	(972)
Income tax expense (benefit)	**126**	213	(256)
	318	592	(716)
Net change in fair value due to change in equity instruments designated at fair value through other comprehensive income[1]:			
Net gains (losses) in fair value	**75**	n/a	n/a
Income tax expense (benefit)	**15**	n/a	n/a
	60	n/a	n/a
Net change in fair value due to change in own credit risk on financial liabilities designated under the fair value option:			
Change in fair value due to change in own credit risk on financial liabilities designated under the fair value option	**(30)**	(28)	(23)
Income tax expense (benefit)	**(8)**	(7)	(7)
	(22)	(21)	(16)
Other comprehensive income (loss) from investments in associates	**(7)**	6	(10)
Other comprehensive income (loss)	**(804)**	(709)	(229)
Comprehensive income	**$ 7,920**	$ 7,534	$ 7,139
Comprehensive income attributable to non-controlling interests	**65**	192	237
Comprehensive income attributable to equity holders of the Bank	**$ 7,855**	$ 7,342	$ 6,902
Preferred shareholders and other equity instrument holders	**187**	129	130
Common shareholders	**$ 7,668**	$ 7,213	$ 6,772

(1) The amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Notes 3 and 4).
(2) Includes amounts related to qualifying hedges.
(3) Amount for 2016 includes reclassification of $22 pre-tax to goodwill for acquisition-related cash flow hedges.

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statement of Changes in Equity

($ millions)	Common shares (Note 24)	Retained earnings[1]	Accumulated other comprehensive income (loss): Foreign currency translation	Available-for-sale securities	Debt instruments FVOCI	Equity instruments FVOCI	Cash flow hedges	Other[2]	Other reserves	Total common equity	Preferred shares and other equity instruments (Note 24)	Total attributable to equity holders	Non-controlling interests in subsidiaries (Note 31(b))	Total
Balance as at October 31, 2017	**$ 15,644**	**$ 38,117**	**$ 1,861**	**$ (46)**	**$ –**	**$ –**	**$ 235**	**$ (473)**	**$ 116**	**$ 55,454**	**$ 4,579**	**$ 60,033**	**$ 1,592**	**$ 61,625**
Cumulative effect of adopting IFRS 9[3]	**–**	**(564)**	**–**	**46**	**184**	**(179)**	**–**	**–**	**–**	**(513)**	**–**	**(513)**	**(97)**	**(610)**
Balance as at November 1, 2017	**15,644**	**37,553**	**1,861**	**–**	**184**	**(179)**	**235**	**(473)**	**116**	**54,941**	**4,579**	**59,520**	**1,495**	**61,015**
Net income	**–**	**8,361**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**8,361**	**187**	**8,548**	**176**	**8,724**
Other comprehensive income (loss)	**–**	**–**	**(477)**	**–**	**(252)**	**53**	**(356)**	**339**	**–**	**(693)**	**–**	**(693)**	**(111)**	**(804)**
Total comprehensive income	**$ –**	**$ 8,361**	**$ (477)**	**$ –**	**$ (252)**	**$ 53**	**$ (356)**	**$ 339**	**$ –**	**$ 7,668**	**$ 187**	**$ 7,855**	**$ 65**	**$ 7,920**
Shares issued	**2,708**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**(19)**	**2,689**	**300**	**2,989**	**–**	**2,989**
Shares repurchased/redeemed	**(118)**	**(514)**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**(632)**	**(695)**	**(1,327)**	**–**	**(1,327)**
Dividends and distributions paid to equity holders	**–**	**(3,985)**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**(3,985)**	**(187)**	**(4,172)**	**(199)**	**(4,371)**
Share-based payments[4]	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**6**	**6**	**–**	**6**	**–**	**6**
Other	**–**	**(1)**	**57**	**–**	**–**	**–**	**–**	**–**	**301[5]**	**357**	**–**	**357**	**1,091[5]**	**1,448**
Balance as at October 31, 2018	**$ 18,234**	**$ 41,414**	**$ 1,441**	**$ –**	**$ (68)**	**$ (126)**	**$ (121)**	**$ (134)**	**$ 404**	**$ 61,044**	**$ 4,184**	**$ 65,228**	**$ 2,452**	**$ 67,680**
Balance as at November 1, 2016	$ 15,513	$ 34,752	$ 3,055	$ 14	$ –	$ –	$ 264	$ (1,093)	$ 152	$ 52,657	$ 3,594	$ 56,251	$ 1,570	$ 57,821
Net income	–	7,876	–	–	–	–	–	–	–	7,876	129	8,005	238	8,243
Other comprehensive income (loss)	–	–	(1,194)	(60)	–	–	(29)	620	–	(663)	–	(663)	(46)	(709)
Total comprehensive income	$ –	$ 7,876	$ (1,194)	$ (60)	$ –	$ –	$ (29)	$ 620	$ –	$ 7,213	$ 129	$ 7,342	$ 192	$ 7,534
Shares and other equity instruments issued	313	–	–	–	–	–	–	–	(44)	269	1,560	1,829	–	1,829
Shares repurchased/redeemed	(182)	(827)	–	–	–	–	–	–	–	(1,009)	(575)	(1,584)	–	(1,584)
Dividends and distributions paid to equity holders	–	(3,668)	–	–	–	–	–	–	–	(3,668)	(129)	(3,797)	(133)	(3,930)
Share-based payments[4]	–	–	–	–	–	–	–	–	8	8	–	8	–	8
Other	–	(16)	–	–	–	–	–	–	–	(16)	–	(16)	(37)[5]	(53)
Balance as at October 31, 2017	$ 15,644	$ 38,117	$ 1,861	$ (46)	$ –	$ –	$ 235	$ (473)	$ 116	$ 55,454	$ 4,579	$ 60,033	$ 1,592	$ 61,625
Balance as at November 1, 2015	$ 15,141	$ 31,316	$ 2,633	$ 194	$ –	$ –	$ 7	$ (379)	$ 173	$ 49,085	$ 2,934	$ 52,019	$ 1,460	$ 53,479
Net income	–	6,987	–	–	–	–	–	–	–	6,987	130	7,117	251	7,368
Other comprehensive income (loss)	–	–	422	(180)	–	–	257	(714)	–	(215)	–	(215)	(14)	(229)
Total comprehensive income	$ –	$ 6,987	$ 422	$ (180)	$ –	$ –	$ 257	$ (714)	$ –	$ 6,772	$ 130	$ 6,902	$ 237	$ 7,139
Shares issued	391	–	–	–	–	–	–	–	(28)	363	1,350	1,713	–	1,713
Shares repurchased/redeemed	(19)	(61)	–	–	–	–	–	–	–	(80)	(690)	(770)	–	(770)
Dividends and distributions paid to equity holders	–	(3,468)	–	–	–	–	–	–	–	(3,468)	(130)	(3,598)	(116)	(3,714)
Share-based payments[4]	–	–	–	–	–	–	–	–	7	7	–	7	–	7
Other	–	(22)	–	–	–	–	–	–	–	(22)	–	(22)	(11)[5]	(33)
Balance as at October 31, 2016	$ 15,513	$ 34,752	$ 3,055	$ 14	$ –	$ –	$ 264	$ (1,093)	$ 152	$ 52,657	$ 3,594	$ 56,251	$ 1,570	$ 57,821

(1) Includes undistributed retained earnings of $62 (2017 – $61; 2016 – $63) related to a foreign associated corporation, which is subject to local regulatory restriction.
(2) Includes Share from associates, Employee benefits and Own credit risk.
(3) Refer to Note 4.
(4) Represents amounts on account of share-based payments (refer to Note 26).
(5) Includes changes to non-controlling interests arising from business combinations and related transactions.

The accompanying notes are an integral part of these consolidated financial statements

Consolidated Statement of Cash Flows

Sources (uses) of cash flows for the year ended October 31 ($ millions)	**2018**[1]	2017	2016
Cash flows from operating activities			
Net income	**$ 8,724**	$ 8,243	$ 7,368
Adjustment for:			
Net interest income	**(16,191)**	(15,035)	(14,292)
Depreciation and amortization	**848**	761	684
Provision for credit losses	**2,611**	2,249	2,412
Equity-settled share-based payment expense	**6**	8	7
Net gain on sale of investment securities	**(146)**	(380)	(534)
Net gain on disposition of business	**–**	(62)	(116)
Net income from investments in associated corporations	**(559)**	(407)	(414)
Income tax expense	**2,382**	2,033	2,030
Restructuring charge	**–**	–	378
Changes in operating assets and liabilities:			
Trading assets	**111**	8,377	(10,044)
Securities purchased under resale agreements and securities borrowed	**(7,721)**	(4,631)	(5,363)
Loans	**(31,848)**	(32,589)	(20,355)
Deposits	**40,338**	27,516	6,702
Obligations related to securities sold short	**239**	7,533	4,007
Obligations related to securities sold under repurchase agreements and securities lent	**4,387**	849	20,865
Net derivative financial instruments	**440**	(391)	(3,806)
Other, net	**(188)**	(1,997)	2,293
Dividends received	**332**	1,600	873
Interest received	**27,384**	23,649	21,099
Interest paid	**(11,400)**	(8,730)	(7,787)
Income tax paid	**(1,938)**	(2,012)	(1,471)
Net cash from/(used in) operating activities	**17,811**	16,584	4,536
Cash flows from investing activities			
Interest-bearing deposits with financial institutions	**(704)**	(14,006)	28,447
Purchase of investment securities	**(91,896)**	(64,560)	(94,441)
Proceeds from sale and maturity of investment securities	**84,336**	66,179	65,069
Acquisition/sale of subsidiaries, associated corporations or business units, net of cash acquired	**(3,862)**	229	(1,050)
Property and equipment, net of disposals	**(416)**	3	(348)
Other, net	**(1,183)**	(385)	(431)
Net cash from/(used in) investing activities	**(13,725)**	(12,540)	(2,754)
Cash flows from financing activities			
Proceeds from issue of subordinated debentures	**–**	–	2,465
Redemption/repayment of subordinated debentures	**(233)**	(1,500)	(1,035)
Proceeds from common shares issued	**1,830**	313	391
Proceeds from preferred shares and other equity instruments issued	**300**	1,560	1,350
Redemption of preferred shares	**(695)**	(575)	(690)
Common shares purchased for cancellation	**(632)**	(1,009)	(80)
Cash dividends and distributions paid	**(4,172)**	(3,797)	(3,598)
Distributions to non-controlling interests	**(199)**	(133)	(116)
Other, net	**931**	2,209	(320)
Net cash from/(used in) financing activities	**(2,870)**	(2,932)	(1,633)
Effect of exchange rate changes on cash and cash equivalents	**(44)**	(142)	(18)
Net change in cash and cash equivalents	**1,172**	970	131
Cash and cash equivalents at beginning of year[2]	**7,825**	6,855	6,724
Cash and cash equivalents at end of year[2]	**$ 8,997**	$ 7,825	$ 6,855

(1) The amounts for year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior year amounts have not been restated (refer to Notes 3 and 4).
(2) Represents cash and non-interest bearing deposits with financial institutions (refer to Note 6).

The accompanying notes are an integral part of these consolidated financial statements.

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1 Reporting Entity

The Bank of Nova Scotia (the Bank) is a chartered schedule I bank under the Bank Act (Canada) (the Bank Act) and is regulated by the Office of the Superintendent of Financial Institutions (OSFI). The Bank is a global financial services provider offering a diverse range of products and services, including personal, commercial, corporate and investment banking. The head office of the Bank is located at 1709 Hollis Street, Halifax, Nova Scotia, Canada and its executive offices are at Scotia Plaza, 44 King Street West, Toronto, Canada. The common shares of the Bank are listed on the Toronto Stock Exchange and the New York Stock Exchange.

2 Basis of Preparation

Statement of compliance

These consolidated financial statements were prepared in accordance with International Financial Reporting Standards (IFRS) as issued by International Accounting Standards Board (IASB) and accounting requirements of OSFI in accordance with Section 308 of the Bank Act. Section 308 states that, except as otherwise specified by OSFI, the financial statements are to be prepared in accordance with IFRS.

The consolidated financial statements for the year ended October 31, 2018 have been approved by the Board of Directors for issue on November 27, 2018.

Certain comparative amounts have been restated to conform with the basis of presentation in the current year.

Basis of measurement

The consolidated financial statements have been prepared on the historical cost basis except for the following material items that are measured at fair value in the Consolidated Statement of Financial Position:

- Financial assets and liabilities measured at fair value through profit or loss
- Financial assets and liabilities designated at fair value through profit or loss
- Derivative financial instruments
- Available-for-sale investment securities (applicable prior to November 1, 2017)
- Equity instruments designated at fair value through other comprehensive income (effective November 1, 2017)
- Debt instruments measured at fair value through other comprehensive income (effective November 1, 2017)

Functional and presentation currency

These consolidated financial statements are presented in Canadian dollars, which is the Bank's functional currency. All financial information presented in Canadian dollars has been rounded to the nearest million unless otherwise stated.

Management's use of estimates, assumptions and judgments

The Bank's accounting policies require estimates, assumptions and judgments that relate to matters that are inherently uncertain. The Bank has established procedures to ensure that accounting policies are applied consistently. Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the year in which the estimates are revised and in any future years affected.

Use of estimates and assumptions

The preparation of these consolidated financial statements, in conformity with IFRS, requires management to make estimates and assumptions that affect the reported amount of assets and liabilities at the date of the consolidated financial statements, other comprehensive income and income and expenses during the reporting period. Estimates made by management are based on historical experience and other assumptions that are believed to be reasonable. Key areas of estimation uncertainty include those relating to the allowance for credit losses, the fair value of financial instruments (including derivatives), corporate income taxes, employee benefits, goodwill and intangible assets, the fair value of all identifiable assets and liabilities as a result of business combinations, impairment of non-financial assets, derecognition of financial assets and liabilities and provisions. While management makes its best estimates and assumptions, actual results could differ from these and other estimates.

Significant judgments

In the preparation of these consolidated financial statements, management is required to make significant judgments in the classification and presentation of transactions and instruments and accounting for involvement with other entities.

Significant estimates, assumptions and judgments have been made in the following areas and are discussed as noted in the consolidated financial statements:

Allowance for credit losses	Note 3 Note 13(d)
Fair value of financial instruments	Note 3 Note 7
Corporate income taxes	Note 3 Note 27
Employee benefits	Note 3 Note 28
Goodwill and intangible assets	Note 3 Note 18
Fair value of all identifiable assets and liabilities as a result of business combinations	Note 3 Note 38
Impairment of investment securities	Note 3 Note 12
Impairment of non-financial assets	Note 3 Note 16
Structured entities	Note 3 Note 15
De facto control of other entities	Note 3 Note 31
Derecognition of financial assets and liabilities	Note 3 Note 14
Provisions	Note 3 Note 23

3 Significant Accounting Policies

The significant accounting policies used in the preparation of these consolidated financial statements, including any additional accounting requirements of OSFI, as set out below, have been applied consistently to all periods presented in these consolidated financial statements, with the exception of the adoption of IFRS 9 (refer Note 4).

Basis of consolidation

The consolidated financial statements include the assets, liabilities, financial performance and cash flows of the Bank and all of its subsidiaries, after elimination of intercompany transactions and balances. Subsidiaries are defined as entities controlled by the Bank and exclude associates and joint arrangements. The Bank's subsidiaries can be classified as entities controlled through voting interests or structured entities. The Bank consolidates a subsidiary from the date it obtains control. The Bank controls an investee when it is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. For the Bank to control an entity, all of the three elements of control should be in existence:

- power over the investee;
- exposure, or rights, to variable returns from involvement with the investee; and
- the ability to use power over the investee to affect the amount of the Bank's returns.

The Bank does not control an investee when it is acting as an agent. The Bank assesses whether it is an agent by determining whether it is primarily engaged to act on behalf of and for the benefit of another party or parties. The Bank reassesses whether it controls an investee if facts and circumstances indicate that one or more of the elements of control has changed. Non-controlling interests are presented within equity in the Consolidated Statement of Financial Position separate from equity attributable to equity holders of the Bank. Partial sales and incremental purchases of interests in subsidiaries that do not result in a change of control are accounted for as equity transactions with non-controlling interest holders. Any difference between the carrying amount of the interest and the transaction amount is recorded as an adjustment to retained earnings.

Voting-interest subsidiaries

Control is presumed with an ownership interest of more than 50% of the voting rights in an entity unless there are other factors that indicate that the Bank does not control the entity despite having more than 50% of voting rights.

The Bank may consolidate an entity when it owns less than 50% of the voting rights when it has one or more other attributes of power:

- by virtue of an agreement, over more than half of the voting rights;
- to govern the financial and operating policies of the entity under a statute or an agreement;
- to appoint or remove the majority of the members of the board of directors or equivalent governing body and control of the entity is by that board or body; or
- to govern the financial and operating policies of the entity through the size of its holding of voting rights relative to the size and dispersion of holding of the other vote holders and voting patterns at shareholder meetings (i.e., de facto control).

Structured entities

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

The Bank consolidates all structured entities that it controls.

Investments in associates
An associate is an entity in which the Bank has significant influence, but not control, over the operating and financial policies of the entity. Significant influence is ordinarily presumed to exist when the Bank holds between 20% and 50% of the voting rights. The Bank may also be able to exercise significant influence through board representation. The effects of potential voting rights that are currently exercisable or convertible are considered in assessing whether the Bank has significant influence.

Investments in associates are recognized initially at cost, which includes the purchase price and other costs directly attributable to the purchase. Associates are accounted for using the equity method which reflects the Bank's share of the increase or decrease of the post-acquisition earnings and other movements in the associate's equity.

If there is a loss of significant influence and the investment ceases to be an associate, equity accounting is discontinued from the date of loss of significant influence. If the retained interest on the date of loss of significant influence is a financial asset, it is measured at fair value and the difference between the fair value and the carrying value is recorded as an unrealized gain or loss in the Consolidated Statement of Income.

Investments in associates are evaluated for impairment at the end of each financial reporting period, or more frequently if events or changes in circumstances indicate the existence of objective evidence of impairment.

For purposes of applying the equity method for an investment that has a different reporting period from the Bank, adjustments are made for the effects of any significant events or transactions that occur between the reporting date of the investment and the reporting date of the Bank.

Joint arrangements
A joint arrangement is an arrangement over which two or more parties have joint control. Joint control exists only when decisions about the relevant activities (i.e., those that significantly affect the returns of the arrangement) require the unanimous consent of the parties sharing the control of the arrangement. Investments in joint arrangements are classified as either joint operations or joint ventures depending on the contractual rights and obligations of each investor, rather than the legal structure of the joint arrangement.

Similar to accounting for investment in associates, for joint ventures, investments are recognized initially at cost and accounted for using the equity method which reflects the Bank's share of the increase or decrease of the post-acquisition earnings and other movements in the joint venture's equity. Investments in joint ventures are evaluated for impairment at the end of each financial reporting period, or more frequently if events or changes in circumstances indicate the existence of objective evidence of impairment.

If there is a loss of joint control and it does not result in the Bank having significant influence over the joint venture, equity accounting is discontinued from the date of loss of joint control. If the retained interest in the former joint venture on the date of loss of joint control is a financial asset, it is measured at fair value and the difference between the fair value and the carrying value is recorded as an unrealized gain or loss in the Consolidated Statement of Income.

Translation of foreign currencies
The financial statements of each of the Bank's foreign operations are measured using its functional currency, being the currency of the primary economic environment of the foreign operation.

Translation gains and losses related to the Bank's monetary items are recognized in non-interest income in the Consolidated Statement of Income. Revenues and expenses denominated in foreign currencies are translated using average exchange rates, except for depreciation and amortization of buildings, equipment and leasehold improvements of the Bank, purchased in foreign currency, which are translated using historical rates. Foreign currency non-monetary items that are measured at historical cost are translated into the functional currency at historical rates. Foreign currency non-monetary items measured at fair value are translated into functional currency using the rate of exchange at the date the fair value was determined. Foreign currency gains and losses on non-monetary items are recognized in the Consolidated Statement of Income or Consolidated Statement of Comprehensive Income consistent with the gain or loss on the non-monetary item.

Unrealized gains and losses arising upon translation of foreign operations, together with any gains or losses arising from hedges of those net investment positions to the extent effective, are credited or charged to net change in unrealized foreign currency translation gains/losses in other comprehensive income in the Consolidated Statement of Comprehensive Income. On disposal or partial disposal of a foreign operation, an appropriate portion of the translation differences previously recognized in other comprehensive income are recognized in the Consolidated Statement of Income.

Financial assets and liabilities

Recognition and initial measurement
The Bank, on the date of origination or purchase, recognizes loans, debt and equity securities, deposits and subordinated debentures at the fair value of consideration paid. Regular-way purchases and sales of financial assets are recognized on the settlement date. All other financial assets and liabilities, including derivatives, are initially recognized on the trade date at which the Bank becomes a party to the contractual provisions of the instrument.

The initial measurement of a financial asset or liability is at fair value plus transaction costs that are directly attributable to its purchase or issuance. For instruments measured at fair value through profit or loss, transaction costs are recognized immediately in profit or loss.

Classification and measurement, derecognition, and impairment of financial instruments effective November 1, 2017

Classification and measurement

Classification and measurement of financial assets
Financial assets are classified into one of the following measurement categories:

- Amortized cost;
- Fair value through other comprehensive income (FVOCI);
- Fair value through profit or loss (FVTPL);
- Elected at fair value through other comprehensive income (Equities only); or
- Designated at FVTPL

Financial assets include both debt and equity instruments.

Debt instruments

Debt instruments, including loans and debt securities, are classified into one of the following measurement categories:

- Amortized cost;
- Fair value through other comprehensive income (FVOCI);
- Fair value through profit or loss (FVTPL); or
- Designated at FVTPL

Classification of debt instruments is determined based on:

(i) The business model under which the asset is held; and
(ii) The contractual cash flow characteristics of the instrument.

Business model assessment

Business model assessment involves determining how financial assets are managed in order to generate cash flows. The Bank's business model assessment is based on the following categories:

- Held to collect: The objective of the business model is to hold assets and collect contractual cash flows. Any sales of the asset are incidental to the objective of the model.
- Held to collect and for sale: Both collecting contractual cash flows and sales are integral to achieving the objectives of the business model.
- Other business model: The business model is neither held-to-collect nor held-to-collect and for sale.

The Bank assesses business model at a portfolio level reflective of how groups of assets are managed together to achieve a particular business objective. For the assessment of a business model, the Bank takes into consideration the following factors:

- How the performance of assets in a portfolio is evaluated and reported to group heads and other key decision makers within the Bank's business lines;
- How compensation is determined for the Bank's business lines' management that manages the assets;
- Whether the assets are held for trading purposes i.e., assets that the Bank acquires or incurs principally for the purpose of selling or repurchasing in the near term, or holds as part of a portfolio that is managed together for short-term profit or position taking;
- The risks that affect the performance of assets held within a business model and how those risks are managed; and
- The frequency and volume of sales in prior periods and expectations about future sales activity.

Contractual cash flow characteristics assessment

The contractual cash flow characteristics assessment involves assessing the contractual features of an instrument to determine if they give rise to cash flows that are consistent with a basic lending arrangement. Contractual cash flows are consistent with a basic lending arrangement if they represent cash flows that are solely payments of principal and interest on the principal amount outstanding (SPPI).

Principal is defined as the fair value of the instrument at initial recognition. Principal may change over the life of the instrument due to repayments or amortization of premium/discount.

Interest is defined as the consideration for the time value of money and the credit risk associated with the principal amount outstanding and for other basic lending risks and costs (liquidity risk and administrative costs), and a profit margin.

If the Bank identifies any contractual features that could significantly modify the cash flows of the instrument such that they are no longer consistent with a basic lending arrangement, the related financial asset is classified and measured at FVTPL.

Debt instruments measured at amortized cost

Debt instruments are measured at amortized cost if they are held within a business model whose objective is to hold for collection of contractual cash flows where those cash flows represent solely payments of principal and interest. After initial measurement, debt instruments in this category are carried at amortized cost. Interest income on these instruments is recognized in interest income using the effective interest rate method. The effective interest rate is the rate that discounts estimated future cash payments or receipts through the expected life of the financial asset to the gross carrying amount of a financial asset. Amortized cost is calculated by taking into account any discount or premium on acquisition, transaction costs and fees that are an integral part of the effective interest rate.

Impairment on debt instruments measured at amortized cost is calculated using the expected credit loss approach. Loans and debt securities measured at amortized cost are presented net of the allowance for credit losses (ACL) in the statement of financial position.

Debt instruments measured at FVOCI

Debt instruments are measured at FVOCI if they are held within a business model whose objective is to hold for collection of contractual cash flows and for selling financial assets, where the assets' cash flows represent payments that are solely payments of principal and interest. Subsequent to initial recognition, unrealized gains and losses on debt instruments measured at FVOCI are recorded in other comprehensive income (OCI), unless the instrument is designated in a fair value hedge relationship. When designated in a fair value hedge relationship, any changes in fair value due to changes in the hedged risk are recognized in Non-interest income in the Consolidated Statement of Income. Upon derecognition, realized gains and losses are reclassified from OCI and recorded in Non-interest income in the Consolidated Statement of Income on an average cost basis. Foreign exchange gains and losses that relate to the amortized cost of the debt instrument are recognized in the Consolidated Statement of Income. Premiums, discounts and related transaction costs are amortized over the expected life of the instrument to Interest income in the Consolidated Statement of Income using the effective interest rate method.

Impairment on debt instruments measured at FVOCI is calculated using the expected credit loss approach. The ACL on debt instruments measured at FVOCI does not reduce the carrying amount of the asset in the Consolidated Statement of Financial Position, which remains at its fair value. Instead, an amount equal to the allowance that would arise if the assets were measured at amortised cost is recognised in OCI with a corresponding charge to Provision for credit losses in the Consolidated Statement of Income. The accumulated allowance recognised in OCI is recycled to the Consolidated Statement of Income upon derecognition of the debt instrument.

Debt instruments measured at FVTPL
Debt instruments are measured at FVTPL if assets:

i) Are held for trading purposes;
ii) Are held as part of a portfolio managed on a fair value basis; or
iii) Whose cash flows do not represent payments that are solely payments of principal and interest.

These instruments are measured at fair value in the Consolidated Statement of Financial Position, with transaction costs recognized immediately in the Consolidated Statement of Income as part of Non-interest income. Realized and unrealized gains and losses are recognized as part of Non-interest income in the Consolidated Statement of Income.

Debt instruments designated at FVTPL
Financial assets classified in this category are those that have been designated by the Bank upon initial recognition, and once designated, the designation is irrevocable. The FVTPL designation is available only for those financial assets for which a reliable estimate of fair value can be obtained. Financial assets are designated at FVTPL if doing so eliminates or significantly reduces an accounting mismatch which would otherwise arise.

Financial assets designated at FVTPL are recorded in the Consolidated Statement of Financial Position at fair value. Changes in fair value are recognized in Non-interest income in the Consolidated Statement of Income.

Equity instruments
Equity instruments are classified into one of the following measurement categories:

- Fair value through profit or loss (FVTPL); or
- Elected at fair value through other comprehensive income (FVOCI).

Equity instruments measured at FVTPL
Equity instruments are measured at FVTPL, unless an election is made to designate them at FVOCI upon purchase, with transaction costs recognized immediately in the Consolidated Statement of Income as part of Non-interest income. Subsequent to initial recognition the changes in fair value are recognized as part of Non-interest income in the Consolidated Statement of Income.

Equity instruments measured at FVOCI
At initial recognition, there is an irrevocable option for the Bank to classify non-trading equity instruments at FVOCI. This election is used for certain equity investments for strategic or longer term investment purposes. This election is made on an instrument-by-instrument basis and is not available to equity instruments that are held for trading purposes.

Gains and losses on these instruments including when derecognized/sold are recorded in OCI and are not subsequently reclassified to the Consolidated Statement of Income. As such, there is no specific impairment requirement. Dividends received are recorded in Interest income in the Consolidated Statement of Income. Any transaction costs incurred upon purchase of the security are added to the cost basis of the security and are not reclassified to the Consolidated Statement of Income on sale of the security.

Classification and measurement of financial liabilities
Financial liabilities are classified into one of the following measurement categories:

- Fair value through profit or loss (FVTPL);
- Amortized cost; or
- Designated at FVTPL.

Financial liabilities measured at FVTPL
Financial liabilities measured at FVTPL are held principally for the purpose of repurchasing in the near term, or form part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of short term profit-taking. Financial liabilities are recognized on a trade date basis and are accounted for at fair value, with changes in fair value and any gains or losses recognized in the Consolidated Statement of Income as part of the non-interest income. Transaction costs are expensed as incurred.

Financial liabilities measured at amortized cost
Deposits, subordinated notes and debentures are accounted for at amortized cost. Interest on deposits, calculated using the effective interest rate method, is recognized as interest expense. Interest on subordinated notes and debentures, including capitalized transaction costs, is recognized using the effective interest rate method as interest expense.

Financial liabilities designated at FVTPL
Financial liabilities classified in this category are those that have been designated by the Bank upon initial recognition, and once designated, the designation is irrevocable. The FVTPL designation is available only for those financial liabilities for which a reliable estimate of fair value can be obtained.

Financial liabilities are designated at FVTPL when one of the following criteria is met:

- The designation eliminates or significantly reduces an accounting mismatch which would otherwise arise; or
- A group of financial liabilities are managed and their performance is evaluated on a fair value basis, in accordance with a documented risk management strategy; or
- The financial liability contains one or more embedded derivatives which significantly modify the cash flows otherwise required.

Financial liabilities designated at FVTPL are recorded in the Consolidated Statement of Financial Position at fair value. Any changes in fair value are recognized in Non-interest income in the Consolidated Statement of Income, except for changes in fair value arising from changes in the Bank's own credit risk which are recognized in the OCI. Changes in fair value due to changes in the Bank's own credit risk are not subsequently reclassified to Consolidated Statement of Income upon derecognition/extinguishment of the liabilities.

Determination of fair value
Fair value of a financial asset or liability is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants in the principal, or in its absence, the most advantageous market to which the Bank has access at the measurement date.

The Bank values instruments carried at fair value using quoted market prices, where available. Unadjusted quoted market prices for identical instruments represent a Level 1 valuation. When quoted market prices are not available, the Bank maximizes the use of observable inputs within valuation models. When all significant inputs are observable, the valuation is classified as Level 2. Valuations that require the significant use of unobservable inputs are considered Level 3.

Inception gains and losses are only recognized where the valuation is dependent only on observable market data, otherwise, they are deferred and amortized over the life of the related contract or until the valuation inputs become observable.

IFRS 13 permits a measurement exception that allows an entity to determine the fair value of a group of financial assets and liabilities with offsetting risks based on the sale or transfer of its net exposure to a particular risk (or risks). The Bank has adopted this exception through an accounting policy choice. Consequently, the fair values of certain portfolios of financial instruments are determined based on the net exposure of those instruments to particular market, credit or funding risk.

In determining fair value for certain instruments or portfolios of instruments, valuation adjustments or reserves may be required to arrive at a more accurate representation of fair value. These adjustments include those made for credit risk, bid-offer spreads, unobservable parameters, constraints on prices in inactive or illiquid markets and when applicable funding costs.

Derecognition of financial assets and liabilities

Derecognition of financial assets
The derecognition criteria are applied to the transfer of part of an asset, rather than the asset as a whole, only if such part comprises specifically identified cash flows from the asset, a fully proportionate share of the cash flows from the asset, or a fully proportionate share of specifically identified cash flows from the asset.

A financial asset is derecognized when the contractual rights to the cash flows from the asset has expired; or the Bank transfers the contractual rights to receive the cash flows from the financial asset; or has assumed an obligation to pay those cash flows to an independent third-party; or the Bank has transferred substantially all the risks and rewards of ownership of that asset to an independent third-party. Management determines whether substantially all the risk and rewards of ownership have been transferred by quantitatively comparing the variability in cash flows before and after the transfer. If the variability in cash flows remains significantly similar subsequent to the transfer, the Bank has retained substantially all of the risks and rewards of ownership.

Where substantially all the risks and rewards of ownership of the financial asset are neither retained nor transferred, the Bank derecognizes the transferred asset only if it has lost control over that asset. Control over the asset is represented by the practical ability to sell the transferred asset. If the Bank retains control over the asset, it will continue to recognize the asset to the extent of its continuing involvement. At times such continuing involvement may be in the form of investment in senior or subordinated tranches of notes issued by non-consolidated structured entities.

On derecognition of a financial asset, the difference between the carrying amount and the sum of (i) the consideration received (including any new asset obtained less any new liability assumed) and (ii) any cumulative gain or loss that had been recognized in other comprehensive income is recognized in the Consolidated Statement of Income.

Transfers of financial assets that do not qualify for derecognition are reported as secured financings in the Consolidated Statement of Financial Position.

Derecognition of financial liabilities
A financial liability is derecognized when the obligation under the liability is discharged, canceled or expires. If an existing financial liability is replaced by another from the same counterparty on substantially different terms, or the terms of the existing liability are substantially modified, such an exchange or modification is treated as a derecognition of the original liability and the recognition of a new liability at fair value. The difference in the respective carrying amount of the existing liability and the new liability is recognized as a gain/loss in the Consolidated Statement of Income.

Impairment

Scope
The Bank applies a three-stage approach to measure allowance for credit losses, using an expected credit loss approach as required under IFRS 9, for the following categories of financial instruments that are not measured at fair value through profit or loss:

- Amortized cost financial assets;
- Debt securities classified as at FVOCI;
- Off-balance sheet loan commitments; and
- Financial guarantee contracts.

Expected credit loss impairment model
The Bank's allowance for credit losses calculations are outputs of models with a number of underlying assumptions regarding the choice of variable inputs and their interdependencies. The expected credit loss impairment model reflects the present value of all cash shortfalls related to default events either (i) over the following twelve months or (ii) over the expected life of a financial instrument depending on credit deterioration from inception. The allowance for credit losses reflects an unbiased, probability-weighted outcome which considers multiple scenarios based on reasonable and supportable forecasts.

This impairment model measures credit loss allowances using a three-stage approach based on the extent of credit deterioration since origination:

- Stage 1 – Where there has not been a significant increase in credit risk (SIR) since initial recognition of a financial instrument, an amount equal to 12 months expected credit loss is recorded. The expected credit loss is computed using a probability of default occurring over the next 12 months. For those instruments with a remaining maturity of less than 12 months, a probability of default corresponding to remaining term to maturity is used.

- Stage 2 – When a financial instrument experiences a SIR subsequent to origination but is not considered to be in default, it is included in Stage 2. This requires the computation of expected credit loss based on the probability of default over the remaining estimated life of the financial instrument.
- Stage 3 – Financial instruments that are considered to be in default are included in this stage. Similar to Stage 2, the allowance for credit losses captures the lifetime expected credit losses.

Measurement of expected credit loss

The probability of default (PD), exposure at default (EAD), and loss given default (LGD) inputs used to estimate expected credit losses are modelled based on macroeconomic variables that are most closely related with credit losses in the relevant portfolio.

Details of these statistical parameters/inputs are as follows:

- PD – The probability of default is an estimate of the likelihood of default over a given time horizon. A default may only happen at a certain time over the remaining estimated life, if the facility has not been previously derecognized and is still in the portfolio.
- EAD – The exposure at default is an estimate of the exposure at a future default date, taking into account expected changes in the exposure after the reporting date, including repayments of principal and interest, whether scheduled by contract or otherwise, expected drawdowns on committed facilities, and accrued interest from missed payments.
- LGD – The loss given default is an estimate of the loss arising in the case where a default occurs at a given time. It is based on the difference between the contractual cash flows due and those that the lender would expect to receive, including from the realization of any collateral. It is usually expressed as a percentage of the EAD.

Forward-looking information

The estimation of expected credit losses for each stage and the assessment of significant increases in credit risk consider information about past events and current conditions as well as reasonable and supportable forecasts of future events and economic conditions. The estimation and application of forward-looking information may require significant judgment.

Macroeconomic factors

In its models, the Bank relies on a broad range of forward-looking economic information as inputs, such as: GDP growth, unemployment rates, central-bank interest rates, and house-price indices. The inputs and models used for calculating expected credit losses may not always capture all characteristics of the market at the date of the financial statements. To reflect this, qualitative adjustments or overlays may be made as temporary adjustments using expert credit judgment.

Multiple forward-looking scenarios

The Bank determines its allowance for credit losses using three probability-weighted forward-looking scenarios. The Bank considers both internal and external sources of information and data in order to achieve an unbiased projections and forecasts. The Bank prepares the scenarios using forecasts generated by Scotiabank Economics (SE). The forecasts are created using internal and external models which are modified by SE as necessary to formulate a 'base case' view of the most probable future direction of relevant economic variables as well as a representative range of other possible forecast scenarios. The process involves the development of two additional economic scenarios and consideration of the relative probabilities of each outcome.

The 'base case' represents the most likely outcome and is aligned with information used by the Bank for other purposes such as strategic planning and budgeting. The other scenarios represent more optimistic and more pessimistic outcomes. The Bank has identified and documented key drivers of credit risk and credit losses for each portfolio of financial instruments and, using an analysis of historical data, has estimated relationships between macroeconomic variables, credit risk, and credit losses.

Assessment of significant increase in credit risk (SIR)

At each reporting date, the Bank assesses whether there has been a significant increase in credit risk for exposures since initial recognition by comparing the risk of default occurring over the remaining expected life from the reporting date and the date of initial recognition. The assessment considers borrower-specific quantitative and qualitative information without consideration of collateral, and the impact of forward-looking macroeconomic factors.

The common assessments for SIR on retail and non-retail portfolios include macroeconomic outlook, management judgement, and delinquency and monitoring. Forward-looking macroeconomic factors are a key component of the macroeconomic outlook. The importance and relevance of each specific macroeconomic factor depends on the type of product, characteristics of the financial instruments and the borrower and the geographical region. Quantitative models may not always be able to capture all reasonable and supportable information that may indicate a significant increase in credit risk. Qualitative factors may be assessed to supplement the gap. Examples of situations include changes in adjudication criteria for a particular group of borrowers; changes in portfolio composition; and natural disasters impacting certain portfolios. With regards to delinquency and monitoring, there is a rebuttable presumption that the credit risk of the financial instrument has increased since initial recognition when contractual payments are more than 30 days overdue.

Retail portfolio – For retail exposures, a significant increase in credit risk cannot be assessed using forward looking information at an individual account level. Therefore, the assessment must be done at the segment level. Segment migration thresholds exist for each PD model by product which considers the proportionate change in PD as well as the absolute change in PD. The thresholds used for PD migration are reviewed and assessed at least annually, unless there is a significant change in credit risk management practices in which case the review is brought forward.

Non-retail portfolio – The Bank uses a risk rating scale (IG codes) for its non-retail exposures. All non-retail exposures have an IG code assigned that reflects the probability of default of the borrower. Both borrower specific and non-borrower specific (i.e. macroeconomic) forward looking information is considered and reflected in the IG rating. Significant increase in credit risk is evaluated based on the migration of the exposures among IG codes.

Expected life

When measuring expected credit loss, the Bank considers the maximum contractual period over which the Bank is exposed to credit risk. All contractual terms are considered when determining the expected life, including prepayment, and extension and rollover options. For certain revolving credit facilities, such as credit cards, the expected life is estimated based on the period over which the Bank is exposed to credit risk and how the credit losses are mitigated by management actions.

Presentation of allowance for credit losses in the Statement of Financial Position

- Financial assets measured at amortized cost: as a deduction from the gross carrying amount of the financial assets;
- Debt instruments measured at fair value through other comprehensive income: no allowance is recognized in the Statement of Financial Position because the carrying value of these assets is their fair value. However, the allowance determined is presented in the accumulated other comprehensive income;
- Off-balance sheet credit risks include undrawn lending commitments, letters of credit and letters of guarantee: as a provision in other liabilities.

Modified financial assets
If the terms of a financial asset are modified or an existing financial asset is replaced with a new one, an assessment is made to determine if the existing financial asset should be derecognized. Where a modification does not result in derecognition, the date of origination continues to be used to determine SIR. Where a modification results in derecognition, the new financial asset is recognized at its fair value on the modification date. The modification date is also the date of origination for this new asset.

The Bank may modify the contractual terms of loans for either commercial or credit reasons. The terms of a loan in good standing may be modified for commercial reasons to provide competitive pricing to borrowers. Loans are also modified for credit reasons where the contractual terms are modified to grant a concession to a borrower that may be experiencing financial difficulty.

For all financial assets modifications of the contractual terms may result in derecognition of the original asset when the changes to the terms of the loans are considered substantial. These terms include interest rate, authorized amount, term, or type of underlying collateral. The original loan is derecognized and the new loan is recognized at its fair value. The difference between the carrying value of the derecognized asset and the fair value of the new asset is recognized in the Income Statement.

For all loans, performing and credit-impaired, where the modification of terms did not result in the derecognition of the loan, the gross carrying amount of the modified loan is recalculated based on the present value of the modified cash flows discounted at the original effective interest rate and any gain or loss from the modification is recorded in the provision for credit losses line in the income statement.

Definition of default
The Bank considers a financial instrument to be in default as a result of one or more loss events that occurred after the date of initial recognition of the instrument and the loss event has a negative impact on the estimated future cash flows of the instrument that can be reliably estimated. This includes events that indicate:

- significant financial difficulty of the borrower;
- default or delinquency in interest or principal payments;
- high probability of the borrower entering a phase of bankruptcy or a financial reorganization;
- measurable decrease in the estimated future cash flows from the loan or the underlying assets that back the loan.

The Bank considers that default has occurred and classifies the financial asset as impaired when it is more than 90 days past due, with the exception of credit card receivables that are treated as defaulted when 180 days past due, unless reasonable and supportable information demonstrates that a more lagging default criterion is appropriate.

Write-off policy
The Bank writes off an impaired financial asset (and the related impairment allowance), either partially or in full, when there is no realistic prospect of recovery. Where financial assets are secured, write-off is generally after receipt of any proceeds from the realization of security. In circumstances where the net realizable value of any collateral has been determined and there is no reasonable expectation of further recovery, write-off may be earlier. Credit card receivables 180 days past due are written-off. In subsequent periods, any recoveries of amounts previously written off are credited to the provision for credit losses in the Consolidated Statement of Income.

Purchased loans
All purchased loans are initially measured at fair value on the date of acquisition. As a result no allowance for credit losses would be recorded in the Consolidated Statement of Financial Position on the date of acquisition. Purchased loans may fit into either of the two categories: Performing loans or Purchased Credit Impaired (PCI) loans.

Purchased performing loans follow the same accounting as originated performing loans and are reflected in Stage 1 on the date of the acquisition. They will be subject to a 12-month allowance for credit losses which is recorded as a provision for credit losses in the Consolidated Statement of Income. The fair value adjustment set up for these loans on the date of acquisition is amortized into interest income over the life of these loans.

PCI loans are reflected in Stage 3 and are always subject to lifetime allowance for credit losses. Any changes in the expected cash flows since the date of acquisition are recorded as a charge/recovery in the provision for credit losses in the Consolidated Statement of Income at the end of all reporting periods subsequent to the date of acquisition.

Classification and measurement, derecognition, and impairment of financial instruments effective prior to November 1, 2017

Trading assets and liabilities
Trading assets and liabilities are measured at fair value in the Consolidated Statement of Financial Position, with transaction costs recognized immediately in the Consolidated Statement of Income as part of non-interest income – trading revenues. Gains and losses realized on disposal and unrealized gains and losses due to fair value changes on trading assets and liabilities, other than certain derivatives, are recognized as part of non-interest income – trading revenues in the Consolidated Statement of Income. Trading assets and liabilities are not reclassified subsequent to their initial recognition.

Investment securities
Investment securities are comprised of available-for-sale and held-to-maturity securities.

Available-for-sale investment securities
Available-for-sale investment securities include equity and debt securities. Equity investments classified as available-for-sale are those which are neither classified as held-for-trading nor designated at fair value through profit or loss. Debt securities in this category are those which are intended to be held for an indefinite period of time and which may be sold in response to needs for liquidity or in response to changes in the market conditions.

Available-for-sale investment securities are recorded at fair value with unrealized gains and losses recorded in other comprehensive income. When realized, these gains and losses are reclassified from the Consolidated Statement of Comprehensive Income and recorded in the Consolidated Statement of Income on an average cost basis. For non-monetary investment securities designated as available-for-sale, the gain or loss recognized in other comprehensive income includes any related foreign exchange gains or losses. Foreign exchange gains and losses that relate to the amortized cost of an available-for-sale debt security are recognized in the Consolidated Statement of Income.

Premiums, discounts and related transaction costs on available-for-sale debt securities are amortized over the expected life of the instrument to interest income – securities in the Consolidated Statement of Income using the effective interest method.

Transaction costs on available-for-sale equity securities are initially capitalized and then recognized as part of the net realized gain/loss on subsequent sale of the instrument in the Consolidated Statement of Income.

Held-to-maturity investment securities
Held-to-maturity investment securities are non-derivative assets with fixed or determinable payments and fixed maturity that the Bank has the positive intent and ability to hold to maturity, and which do not meet the definition of a loan, are not held-for-trading, and are not designated at fair value through profit or loss or as available-for-sale. After initial measurement, held-to-maturity investment securities are carried at amortized cost using the effective interest method, less impairment. Amortized cost is calculated by taking into account any discount or premium on acquisition, transaction costs and fees that are an integral part of the effective interest rate. The amortization is included in interest income – securities in the Consolidated Statement of Income.

A sale or reclassification of a more than an insignificant amount of held-to-maturity investments would result in the reclassification of all held-to-maturity investments as available-for-sale, and would prevent the Bank from classifying investment securities as held-to-maturity for the current and the following two financial years. However, sales and reclassifications in any of the following circumstances would not trigger a reclassification:

- Sales or reclassifications that are so close to maturity that changes in the market rate of interest would not have a significant effect on the financial asset's fair value;
- Sales or reclassifications after the Bank has collected substantially all of the asset's original principal; or
- Sales or reclassifications attributable to non-recurring isolated events beyond the Bank's control that could not have been reasonably anticipated.

Impairment of investment securities
Investment securities are evaluated for impairment at the end of each reporting period, or more frequently if events or changes in circumstances indicate the existence of objective evidence of impairment.

In the case of equity instruments classified as available-for-sale, a significant or prolonged decline in the fair value of the security below its original cost is objective evidence of impairment. In the case of debt instruments classified as available-for-sale and held-to-maturity investment securities, impairment is assessed based on the same criteria as impairment of loans.

When a decline in value of available-for-sale debt or equity instrument is due to impairment, the carrying value of the security continues to reflect fair value. Losses arising from impairment are reclassified from accumulated other comprehensive income and included in net gain on investment securities within non-interest income in the Consolidated Statement of Income.

The losses arising from impairment of held-to-maturity investment securities are recognized in net gain on investment securities within non-interest income in the Consolidated Statement of Income.

Reversals of impairment losses on available-for-sale debt instruments resulting from increases in fair value related to events occurring after the date of impairment are included in net gain on investment securities within non-interest income in the Consolidated Statement of Income, to a maximum of the original impairment charge. Reversals of impairment on available-for-sale equity instruments are not recognized in the Consolidated Statement of Income; increases in fair value of such instruments after impairment are recognized in accumulated other comprehensive income.

Reversals of impairment losses on held-to-maturity investment securities are included in net gain on investment securities within non-interest income in the Consolidated Statement of Income, to a maximum of the amortized cost of the investment before the original impairment charge.

Financial assets and liabilities designated at fair value through profit or loss
Financial assets and financial liabilities classified in this category are those that have been designated by the Bank on initial recognition. The Bank may only designate an instrument at fair value through profit or loss when one of the following criteria is met, and designation is determined on an instrument by instrument basis:

- The designation eliminates or significantly reduces the inconsistent treatment that would otherwise arise from measuring the assets or liabilities on a different basis; or
- The assets and liabilities are part of a group of financial assets, financial liabilities or both which are managed together and their performance evaluated on a fair value basis, in accordance with a documented risk management or investment strategy and the information about the group is provided to key management personnel and it can be demonstrated that significant financial risks are eliminated or significantly reduced; or
- The financial instrument contains one or more embedded derivatives which significantly modify the cash flows otherwise required.

Financial assets and financial liabilities designated at fair value through profit or loss are recorded in the Consolidated Statement of Financial Position at fair value. For assets designated at fair value through profit or loss, changes in fair value are recognized in the Consolidated Statement of Income. For liabilities designated at fair value through profit or loss, changes in fair value arising from changes in the Bank's own credit risk are recognized in the Consolidated Statement of Comprehensive Income (OCI), without subsequent reclassification to the Consolidated Statement of Income, unless doing so would create or increase an accounting mismatch. All other changes in fair value are recognized in the Consolidated Statement of Income.

Loans

Loans include loans and advances originated or purchased by the Bank which are not classified as held-for-trading, held-to-maturity or designated at fair value. Debt securities, which are not trading securities or have not been designated as available-for-sale securities and that are not quoted in an active market, are also classified as loans.

Loans originated by the Bank are recognized when cash is advanced to a borrower. Loans purchased are recognized when cash consideration is paid by the Bank. Loans are measured at amortized cost using the effective interest method, less any impairment losses. Loans are stated net of allowance for credit losses.

Derecognition of financial assets and liabilities

Derecognition of financial assets

The derecognition criteria are applied to the transfer of part of an asset, rather than the asset as a whole, only if such part comprises specifically identified cash flows from the asset, a fully proportionate share of the cash flows from the asset, or a fully proportionate share of specifically identified cash flows from the asset.

A financial asset is derecognized when the contractual rights to the cash flows from the asset has expired; or the Bank transfers the contractual rights to receive the cash flows from the financial asset; or has assumed an obligation to pay those cash flows to an independent third-party; or the Bank has transferred substantially all the risks and rewards of ownership of that asset to an independent third-party. Management determines whether substantially all the risk and rewards of ownership have been transferred by quantitatively comparing the variability in cash flows before and after the transfer. If the variability in cash flows remains significantly similar subsequent to the transfer, the Bank has retained substantially all of the risks and rewards of ownership.

Where substantially all the risks and rewards of ownership of the financial asset are neither retained nor transferred, the Bank derecognizes the transferred asset only if it has lost control over that asset. Control over the asset is represented by the practical ability to sell the transferred asset. If the Bank retains control over the asset, it will continue to recognize the asset to the extent of its continuing involvement. At times such continuing involvement may be in the form of investment in senior or subordinated tranches of notes issued by non-consolidated structured entities.

On derecognition of a financial asset, the difference between the carrying amount and the sum of (i) the consideration received (including any new asset obtained less any new liability assumed) and (ii) any cumulative gain or loss that had been recognized in other comprehensive income is recognized in the Consolidated Statement of Income.

Transfers of financial assets that do not qualify for derecognition are reported as secured financings in the Consolidated Statement of Financial Position.

Derecognition of financial liabilities

A financial liability is derecognized when the obligation under the liability is discharged, canceled or expires. If an existing financial liability is replaced by another from the same counterparty on substantially different terms, or the terms of the existing liability are substantially modified, such an exchange or modification is treated as a derecognition of the original liability and the recognition of a new liability at fair value. The difference in the respective carrying amount of the existing liability and the new liability is recognized as a gain/loss in the Consolidated Statement of Income.

Loan impairment and allowance for credit losses:

The Bank considers a loan to be impaired when there is objective evidence of impairment as a result of one or more loss events that occurred after the date of initial recognition of the loan and the loss event has an impact on the estimated future cash flows of the loan that can be reliably estimated.

Objective evidence is represented by observable data that comes to the attention of the Bank and includes events that indicate:

- significant financial difficulty of the borrower;
- a default or delinquency in interest or principal payments;
- a high probability of the borrower entering a phase of bankruptcy or a financial reorganization;
- a measurable decrease in the estimated future cash flows from the loan or the underlying assets that back the loan.

If a payment on a loan is contractually 90 days in arrears, the loan will be classified as impaired, if not already classified as such, unless the loan is fully secured, the collection of the debt is in process, and the collection efforts are reasonably expected to result in repayment of the loan or in restoring it to a current status within 180 days from the date a payment has become contractually in arrears. Finally, a loan that is contractually 180 days in arrears is classified as impaired in all situations, except when it is guaranteed or insured by the Canadian government, the provinces or a Canadian government agency; such loans are classified as impaired if the loan is contractually in arrears for 365 days. Any credit card loan that has a payment that is contractually 180 days in arrears is written off.

Losses expected as a result of future events are not recognized.

The Bank considers evidence of impairment for loans and advances at both an individual and collective level.

Individual impairment allowance

For all loans that are considered individually significant, the Bank assesses on a case-by-case basis at each reporting period whether an individual allowance for loan losses is required.

For those loans where objective evidence of impairment exists and the Bank has determined the loan to be impaired, impairment losses are determined based on the Bank's aggregate exposure to the customer considering the following factors:

- the customer's ability to generate sufficient cash flow to service debt obligations;
- the extent of other creditors' commitments ranking ahead of, or pari passu with, the Bank and the likelihood of other creditors continuing to support the company;
- the complexity of determining the aggregate amount and ranking of all creditor claims and the extent to which legal and insurance uncertainties are evident; and
- the realizable value of security (or other credit mitigants) and likelihood of successful repossession.

Impairment losses are calculated by discounting the expected future cash flows of a loan at its original effective interest rate, and comparing the resultant present value with the loan's current carrying amount. This results in interest income being recognized using the original effective interest rate.

Collective impairment allowance

For loans that have not been individually assessed as being impaired, the Bank pools them into groups to assess them on a collective basis. Collective allowances are calculated for impaired loans and performing loans. Allowances related to performing loans estimate probable incurred losses that are inherent in the portfolio but have not yet been specifically identified as impaired.

Internal risk rating parameters are used in the calculation of the collective impairment allowance. For non-retail loan portfolios, internal risk rating parameters form the basis for calculating the quantitative portion of the collective allowance for performing loans:

- Probability of Default rates (PD) which are based upon the internal risk rating for each borrower;
- Loss Given Default rates (LGD); and
- Exposure at Default factors (EAD).

Funded exposures are multiplied by the borrower's PD and by the relevant LGD parameter.

Committed but undrawn exposures are multiplied by the borrower's PD, by the relevant LGD parameter, and by the relevant EAD parameter. A model stress component is also applied to recognize uncertainty in the credit risk parameters and the fact that current actual loss rates may differ from the long-term averages included in the model.

Retail loans

Retail loans represented by residential mortgages, credit cards and other personal loans are considered by the Bank to be homogeneous groups of loans that are not considered individually significant. All homogeneous groups of loans are assessed for impairment on a collective basis.

Mortgages are collectively assessed for impairment, taking into account number of days past due, historical loss experience and incorporating both quantitative and qualitative factors including the current business and economic environment and the realizable value of collateral to determine the appropriate level of the collective impairment allowance.

A roll rate methodology is used to determine impairment losses on a collective basis for credit cards and other personal loans because individual loan assessment is impracticable. Under this methodology, loans with similar credit characteristics are grouped into ranges according to the number of days past due and statistical analysis is used to estimate the likelihood that loans in each range will progress through the various stages of delinquency and ultimately prove irrecoverable. This methodology employs statistical analyses of historical data and experience of delinquency and default to estimate the amount of loans that will eventually be written off as a result of the events not identifiable on an individual loan basis. When the portfolio size is small or when information is insufficient or not reliable enough to adopt a roll rate methodology, the Bank adopts a basic formulaic approach based on historical loss rate experience.

Performing loans

Over and above the individually assessed and retail roll rate allowances, loans that were subject to individual assessment for which no evidence of impairment existed, are grouped together according to their credit risk characteristics for the purpose of reassessing them on a collective basis. This reflects impairment losses that the Bank has incurred as a result of events that have occurred but where the individual loss has not been identified.

The collective impairment allowance for such loans is determined after taking into account:

- historical loss experience in portfolios of similar credit risk characteristics (for example, by industry sector, loan grade or product);
- the estimated period between impairment occurring and the loss being identified and evidenced by the establishment of an appropriate allowance against the individual loan; and
- management's experienced judgment as to whether current economic and credit conditions are such that the actual level of inherent losses at the reporting date is likely to be greater or less than that suggested by historical experience. As soon as information becomes available which identifies losses on individual loans within the group, those loans are removed from the group and assessed on an individual basis for impairment.

Provision for credit losses on off-balance sheet positions

A provision is set up for the Bank's off-balance sheet positions and recorded in other liabilities on the Consolidated Statement of Financial Position. The process to determine the provision for off-balance sheet positions is similar to the methodology used for loans. Any change in the provision is recorded in the Consolidated Statement of Income as provision for credit losses.

Write-off of loans

Loans (and the related impairment allowance accounts) are normally written off, either partially or in full, when there is no realistic prospect of recovery. Where loans are secured, write-off is generally after receipt of any proceeds from the realization of security. In circumstances where the net realizable value of any collateral has been determined and there is no reasonable expectation of further recovery, write-off may be earlier.

Reversals of impairment

If the amount of an impairment loss related to loans decreases in a subsequent period, and the decrease can be related objectively to an event occurring after the impairment was recognized, the excess is written back by reducing the loan impairment allowance account accordingly. The write-back is recognized in the provision for credit losses in the Consolidated Statement of Income.

Restructured loans

Restructured loans include loans where the Bank has renegotiated the original terms of a loan by granting a concession to the borrower (concessions). These concessions include interest rate adjustments, deferral or extension of principal or interest payments and forgiveness of a portion of principal or interest. Once the terms of the loan have been renegotiated and agreed upon with the borrower the loan is considered a restructured loan. The investment in the loan is reduced as of the date of the restructuring to the amount of the net expected cash flows receivable under the modified terms, discounted at the original effective interest rate inherent in the loan. The loan is no longer considered past due and the reduction in the carrying value of the loan is recognized as a charge for loan impairment in the Consolidated Statement of Income in the period in which the loan is restructured. In other cases, restructuring may be considered substantial enough to result in recognition of a new loan.

Offsetting of financial instruments

Financial assets and financial liabilities with the same counterparty are offset, with the net amount reported in the Consolidated Statement of Financial Position, only if there is currently a legally enforceable right to offset the recognized amounts and there is an intention to settle on a net basis, or to

realize the assets and settle the liabilities simultaneously. When financial assets and financial liabilities are offset in the Consolidated Statement of Financial Position, the related income and expense items will also be offset in the Consolidated Statement of Income, unless specifically prohibited by an applicable accounting standard.

Cash and deposits with financial institutions

Cash and deposits with financial institutions comprises cash, cash equivalents, demand deposits with banks and other financial institutions, highly liquid investments that are readily convertible to cash, subject to insignificant risk of changes in value. These investments are those with less than three months' maturity from the date of acquisition.

Precious metals

Precious metals are carried at fair value less costs to sell, and any changes in fair value less costs to sell are credited or charged to non-interest income – trading revenues in the Consolidated Statement of Income.

Securities purchased and sold under resale agreements

Securities purchased under resale agreements (reverse repurchase agreements) involve the Bank to purchase securities from a counterparty with an agreement entered to resell the securities at a fixed price at a future date. Since the Bank is reselling the securities at a fixed price at a future date, the risks and rewards have not been transferred to the Bank. The Bank has the right to liquidate the securities purchased in the event of counterparty default.

Whereas, securities sold under agreements to repurchase (repurchase agreements) involve the Bank to sell securities to a counterparty with an agreement entered simultaneously to purchase the securities back at a fixed price at a future date. Since the Bank is purchasing the securities back at a fixed price at a future date, the risks and rewards have not been transferred from the Bank. The counterparty has the right to use the collateral pledged by the Bank in the event of default.

These agreements are treated as collateralized financing arrangements and are initially recognized at amortized cost. The party disbursing the cash takes possession of the securities serving as collateral for the financing and having a market value equal to, or in excess of, the principal amount loaned. The securities received under reverse repurchase agreements and securities delivered under repurchase agreements are not recognized on, or derecognized from, the Consolidated Statement of Financial Position, unless the risks and rewards of ownership are obtained or relinquished. The related interest income and interest expense are recorded on an accrual basis using the effective interest rate method in interest income on the Consolidated Statement of Income.

Obligations related to securities sold short

Obligations related to securities sold short arise in dealing and market-making activities where debt securities and equity shares are sold without possessing such securities.

Similarly, if securities purchased under an agreement to resell are subsequently sold to third parties, the obligation to return the securities is recorded as a short sale within obligations related to securities sold short in the Consolidated Statement of Financial Position. These trading liabilities are measured at fair value with any gains or losses included in non-interest income – trading revenues in the Consolidated Statement of Income. Interest expense accruing on debt securities sold short is recorded in interest expense – other, in the Consolidated Statement of Income.

Securities lending and borrowing

Securities lending and borrowing transactions are usually collateralized by securities or cash. The transfer of the securities to counterparties is only reflected on the Consolidated Statement of Financial Position if the risks and rewards of ownership are also transferred. For cash collateral advanced or received, the Bank presents these transactions as securities sold under repurchase agreement or securities purchased under reverse repurchase agreement, respectively. Interest on cash collateral advanced or received is presented in interest income – securities purchased under resale agreements and securities borrowed or interest expense – other, respectively. Fees received and paid are reported as fee and commission revenues and expenses in the Consolidated Statement of Income, respectively.

Securities borrowed are not recognized on the Consolidated Statement of Financial Position, unless they are then sold to third parties, in which case the obligation to return the securities is recorded as a trading liability and measured at fair value with any gains or losses included in non-interest income – trading revenues, in the Consolidated Statement of Income.

Derivative instruments

Derivative instruments are contracts whose value is derived from interest rates, foreign exchange rates, commodities, equity prices or other financial variables. Most derivative instruments can be characterized as interest rate contracts, foreign exchange and gold contracts, commodity contracts, equity contracts or credit contracts. Derivative instruments are either exchange-traded contracts or negotiated over-the-counter contracts. Negotiated over-the-counter contracts include swaps, forwards and options.

The Bank enters into these derivative contracts for trading purposes, as well as to manage its risk exposures (i.e., to manage the Bank's non-trading interest rate, foreign currency and other exposures). Trading activities are undertaken to meet the needs of the Bank's customers, as well as for the Bank's own account to generate income from trading operations.

Derivatives embedded in other financial liabilities or host contracts are treated as separate derivatives when the following conditions are met:

- their economic characteristics and risks are not closely related to those of the host contract;
- a separate instrument with the same terms as the embedded derivative would meet the definition of a derivative; and
- the combined contract is not held for trading or designated at fair value through profit or loss.

Where an embedded derivative is separable from the host contract but the fair value, as at the acquisition or reporting date, cannot be reliably measured separately, the entire combined contract is measured at fair value. All embedded derivatives are presented on a combined basis with the host contracts although they are separated for measurement purposes when conditions requiring separation are met. Subsequent changes in fair value of embedded derivatives are recognized in non-interest income in the Consolidated Statement of Income.

All derivatives, including embedded derivatives that must be separately accounted for, are recorded at fair value in the Consolidated Statement of Financial Position. The determination of the fair value of derivatives includes consideration of credit risk, estimated funding costs and ongoing direct costs over the life of the instruments. Inception gains or losses on derivatives are only recognized where the valuation is dependent only on observable market data, otherwise, they are deferred and amortized over the life of the related contract, or until the valuation inputs become observable.

The gains and losses resulting from changes in fair values of trading derivatives are included in non-interest income – trading revenues in the Consolidated Statement of Income.

Changes in the fair value of non-trading derivatives that do not qualify for hedge accounting are recorded in the Consolidated Statement of Income in non-interest income – other. Where derivative instruments are used to manage the volatility of share-based payment expense, these derivatives are carried at fair value with changes in the fair value in relation to units hedged included in non-interest expenses – salaries and employee benefits in the Consolidated Statement of Income.

Changes in the fair value of derivatives that qualify for hedge accounting are recorded as non-interest income – other in the Consolidated Statement of Income for fair value hedges and other comprehensive income in the Consolidated Statement of Comprehensive Income for cash flow hedges and net investment hedges.

Hedge accounting

The Bank has elected to continue to apply the hedge accounting requirements of IAS 39. However, the Bank has implemented the additional hedge accounting disclosures that are required by the IFRS 9 related amendments to IFRS 7 "*Financial Instruments: Disclosures*".

The Bank formally documents all hedging relationships and its risk management objective and strategy for undertaking these hedge transactions at inception. The hedge documentation includes identification of the asset, liability, firm commitment or highly probable forecasted transaction being hedged, the nature of the risk being hedged, the hedging instrument used and the method used to assess the effectiveness of the hedge. The Bank also formally assesses, both at each hedge's inception and on an ongoing basis, whether the hedging instruments are highly effective in offsetting changes in fair value or cash flows of the hedged items. Hedge ineffectiveness is measured and recorded in non-interest income – other in the Consolidated Statement of Income.

There are three types of hedges: (i) fair value hedges, (ii) cash flow hedges and (iii) net investment hedges.

Fair value hedges

For fair value hedges, the change in fair value of the hedging instrument is offset in the Consolidated Statement of Income by the change in fair value of the hedged item attributable to the hedged risk. For hedges that are discontinued, the hedged item is no longer adjusted for changes in fair value. The cumulative fair value adjustment of the hedged item is amortized to non-interest income over its remaining term to maturity or written off to non-interest income directly if the hedged item ceases to exist. The Bank utilizes fair value hedges primarily to convert fixed rate financial instruments to floating rate financial instruments. Hedged items include debt securities, loans, deposit liabilities and subordinated debentures. Hedging instruments include single-currency interest rate swaps and cross-currency interest rate swaps.

Cash flow hedges

For cash flow hedges, the change in fair value of the hedging instrument, to the extent effective, is recorded in other comprehensive income until the corresponding gains and losses on the hedged item is recognized in income. For hedges that are discontinued, the cumulative unrealized gain or loss recognized in other comprehensive income is reclassified to non-interest income and/or salaries and employee benefits as the variability in the cash flows of hedged item affects income. However, if the hedged item is derecognized or the forecasted transaction is no longer expected to occur, the unrealized gain or loss is reclassified immediately to non-interest income and/or salaries and employee benefits. The Bank utilizes cash flow hedges primarily to hedge the variability in cash flows relating to floating rate financial instruments and highly probable forecasted revenues and expenses. Hedged items include debt securities, loans, deposit liabilities and highly probable forecasted transactions. Hedging instruments include single-currency interest rate swaps, cross-currency interest rate swaps, total return swaps, foreign currency forwards and foreign currency assets or liabilities.

Net investment hedges

For net investment hedges, the change in fair value of the hedging instrument, to the extent effective, is recorded in other comprehensive income until the corresponding cumulative translation adjustments on the hedged net investment are recognized in income. The Bank designates foreign currency liabilities and foreign currency forwards as hedging instruments to manage the foreign currency exposure and impact on capital ratios arising from foreign operations.

Property and equipment

Land, buildings and equipment

Land is carried at cost. Buildings (including building fittings), equipment, and leasehold improvements are carried at cost less accumulated depreciation and accumulated impairment losses, if any. Cost includes expenditures that are directly attributable to the acquisition of the asset. Depreciation is calculated using the straight-line method over the estimated useful life of the related asset less any residual value as follows: buildings – 40 years, building fittings – 15 years, equipment 3 to 10 years, and leasehold improvements – lease term determined by the Bank. Depreciation expense is included in the Consolidated Statement of Income under non-interest expenses – depreciation and amortization. Depreciation methods, useful lives and residual values are reassessed at each financial year-end and adjusted as appropriate.

When major components of building and equipment have different useful lives, they are accounted for separately and depreciated over each component's estimated useful life.

Net gains and losses on disposal are included in non-interest income – other in the Consolidated Statement of Income in the year of disposal.

Investment property

Investment property is property held either for rental income or for capital appreciation or for both. The Bank holds certain investment properties which are presented in property and equipment on the Consolidated Statement of Financial Position.

Investment property is carried at cost less accumulated depreciation and any accumulated impairment losses. Depreciation is calculated using the straight-line method over the estimated useful life of 40 years. Depreciation methods, useful lives and residual values are reassessed at each financial year-end and adjusted as appropriate.

Assets held-for-sale

Non-current non-financial assets (and disposal groups) are classified as held-for-sale if their carrying amount will be recovered principally through a sale transaction rather than through continuing use. These assets meet the criteria for classification as held-for-sale if they are available for immediate sale in their present condition and their sale is considered highly probable to occur within one year.

Non-current non-financial assets classified as held-for-sale are measured at the lower of their carrying amount and fair value (less costs to sell) and are presented within other assets in the Consolidated Statement of Financial Position. Any subsequent write-down to fair value less costs to sell is recognized in the Consolidated Statement of Income, in non-interest income. Any subsequent increase in the fair value less costs to sell, to the extent this does not exceed the cumulative write-down, is also recognized in non-interest income, together with any realized gains or losses on disposal.

Non-financial assets acquired in exchange for loans as part of an orderly realization are recorded as assets held-for-sale or assets held-for-use. If the acquired asset does not meet the requirement to be considered held-for-sale, the asset is considered held-for-use, measured initially at cost which equals the carrying value of the loan and accounted for in the same manner as a similar asset acquired in the normal course of business.

Business combinations and goodwill

The Bank follows the acquisition method of accounting for the acquisition of subsidiaries. The Bank considers the date on which control is obtained and it legally transfers the consideration for the acquired assets and assumed liabilities of the subsidiary to be the date of acquisition. The cost of an acquisition is measured at the fair value of the consideration paid. The fair value of the consideration transferred by the Bank in a business combination is calculated as the sum of the acquisition date fair value of the assets transferred by the Bank, the liabilities incurred by the Bank to former owners of the acquiree, and the equity interests, including any options, issued by the Bank. The Bank recognizes the acquisition date fair values of any previously held investment in the subsidiary and contingent consideration as part of the consideration transferred in exchange for the acquisition. A gain or loss on any previously held investments of an acquiree is recognized in non-interest income – other in the Consolidated Statement of Income.

In general, all identifiable assets acquired (including intangible assets) and liabilities assumed (including any contingent liabilities) are measured at the acquisition date fair value. The Bank records identifiable intangible assets irrespective of whether the assets have been recognized by the acquiree before the business combination. Non-controlling interests, if any, are recognized at their proportionate share of the fair value of identifiable assets and liabilities, unless otherwise indicated. Where the Bank has an obligation to purchase a non-controlling interest for cash or another financial asset, a portion of the non-controlling interest is recognized as a financial liability based on management's best estimate of the present value of the redemption amount. Where the Bank has a corresponding option to settle the purchase of a non-controlling interest by issuing its own common shares, no financial liability is recorded.

Any excess of the cost of acquisition over the Bank's share of the net fair value of the identifiable assets acquired and liabilities assumed is recorded as goodwill. If the cost of acquisition is less than the fair value of the Bank's share of the identifiable assets acquired and liabilities assumed, the resulting gain is recognized immediately in non-interest income – other in the Consolidated Statement of Income.

During the measurement period (which is within one year from the acquisition date), the Bank may, on a retrospective basis, adjust the amounts recognized at the acquisition date to reflect new information obtained about facts and circumstances that existed as of the acquisition date.

The Bank accounts for acquisition-related costs as expenses in the periods in which the costs are incurred and the services are received.

Subsequent to acquisition, the Bank accounts for the following assets and liabilities recognized in a business combination as described below:

- Contingent liabilities, until resolved, are measured at the higher of the amount that would be recognized as a provision or the amount initially recognized, with any change recognized in the Consolidated Statement of Income.
- Indemnification assets are measured on the same basis as the item to which the indemnification relates.
- Contingent consideration classified as a liability is measured at fair value, with any change recognized in the Consolidated Statement of Income.
- Liabilities to non-controlling interest holders when remeasured at the end of each reporting period, a corresponding change is recorded in equity.

After initial recognition of goodwill in a business combination, goodwill in aggregate is measured at cost less any accumulated impairment losses. Goodwill is not amortized but tested for impairment annually and when circumstances indicate that the carrying value may be impaired.

Goodwill is reviewed at each reporting date to determine whether there is any indication of impairment. For the purpose of impairment testing, goodwill acquired in a business combination is, on the acquisition date, allocated to each of the Bank's group of cash-generating units (CGUs) that is expected to benefit from the combination. CGUs to which goodwill has been allocated are aggregated so that the level at which impairment is tested reflects the lowest level at which goodwill is monitored for internal management purposes. Goodwill impairment, at a standalone subsidiary level, may not in itself result in an impairment at the consolidated Bank level.

The Bank determines the carrying value of the CGU using a regulatory capital approach based on credit, market, and operational risks, and leverage, consistent with the Bank's capital attribution for business line performance measurement. The recoverable amount is the greater of fair value less costs of disposal and value in use. If either fair value less costs of disposal or value in use exceeds the carrying amount, there is no need to determine the other. The recoverable amount of the CGU has been determined using the fair value less costs of disposal method. The estimation of fair value less costs of disposal involves significant judgment in the determination of inputs. In determining fair value less costs of disposal, an appropriate valuation model is used which considers various factors including normalized net income, control premiums and price earnings multiples. These calculations are corroborated by valuation multiples, quoted share prices for publicly traded subsidiaries or other available fair value indicators. An impairment loss is recognized if the carrying amount of the CGU exceeds the recoverable amount. An impairment loss, in respect of goodwill, is not reversed.

Intangible assets

Intangible assets represent identifiable non-monetary assets and are acquired either separately or through a business combination or generated internally. The Bank's intangible assets are mainly comprised of computer software, customer relationships, contract intangibles, core deposit intangibles and fund management contracts.

The cost of a separately acquired intangible asset includes its purchase price and directly attributable costs of preparing the asset for its intended use. Intangibles acquired as part of a business combination are initially recognized at fair value.

In respect of internally generated intangible assets, cost includes all directly attributable costs necessary to create, produce, and prepare the asset to be capable of operating in the manner intended by management.

After initial recognition, an intangible asset is carried at its cost less any accumulated amortization and accumulated impairment losses.

Intangible assets that have finite useful lives are initially measured at cost and are amortized on a straight-line basis over their useful lives as follows: computer software – 5 to 10 years; and other intangible assets – 5 to 20 years. Amortization expense is included in the Consolidated Statement of Income under operating expenses – depreciation and amortization. As intangible assets are considered to be non-financial assets, the impairment model for non-financial assets is applied. Intangible assets with indefinite useful lives are not amortized but are tested for impairment annually and when circumstances indicate that the carrying value may be impaired.

Impairment of non-financial assets

The carrying amount of the Bank's non-financial assets, other than goodwill and indefinite life intangible assets and deferred tax assets which are separately addressed, is reviewed at each reporting date to determine whether there is any indication of impairment. For the purpose of impairment testing, non-financial assets that cannot be tested individually are grouped together into the smallest group of assets that generate cash inflows from continuing use that are largely independent from the cash inflows of other assets or groups of assets.

If any indication of impairment exists then the asset's recoverable amount is estimated. The recoverable amount of an asset or CGU is the greater of its value in use and its fair value less costs of disposal. The Bank's corporate assets do not generate separate cash inflows. If there is an indication that a corporate asset may be impaired, then the recoverable amount is determined for the CGU to which the corporate asset belongs.

An impairment loss is recognized if the carrying amount of an asset or a CGU exceeds its recoverable amount. Impairment losses of continuing operations are recognized in the Consolidated Statement of Income in those expense categories consistent with the nature of the impaired asset. Impairment losses recognized in prior periods are reassessed at each reporting date for any indication that the loss had decreased or no longer exists. An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortization, if no impairment loss had been recognized. Such reversal is recognized in the Consolidated Statement of Income.

Significant judgment is applied in determining the non-financial asset's recoverable amount and assessing whether certain events or circumstances constitute objective evidence of impairment.

Corporate income taxes

The Bank follows the balance sheet liability method for corporate income taxes. Under this method, deferred tax assets and liabilities represent the cumulative amount of tax applicable to temporary differences which are the differences between the carrying amount of the assets and liabilities, and their values for tax purposes. Deferred tax assets are recognized only to the extent it is probable that sufficient taxable profits will be available against which the benefit of these deferred tax assets can be utilized.

Deferred tax assets and liabilities are measured using enacted or substantively enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled.

Deferred and current tax assets and liabilities are only offset when they arise in the same tax reporting group and where the Bank has both the legal right and the intention to settle on a net basis or to realize the asset and settle the liability simultaneously.

The Bank maintains provisions for uncertain tax positions that it believes appropriately reflect the risk of tax positions under discussion, audit, dispute, or appeal with tax authorities, or which are otherwise considered to involve uncertainty. These provisions are made using the Bank's best estimate of the amount expected to be paid based on an assessment of all relevant factors, which are reviewed at the end of each reporting period.

Income tax is recognized in the Consolidated Statement of Income except where it relates to items recognized in other comprehensive income or directly in equity, in which case income tax is recognized in the same line as the related item.

Leases

Bank as a lessor

Assets leased to customers under agreements which transfer substantially all the risks and rewards of ownership, with or without ultimate legal title, are classified as finance leases and presented within loans in the Consolidated Statement of Financial Position. When assets held are subject to a finance lease, the leased assets are derecognized and a receivable is recognized which is equal to the present value of the minimum lease payments, discounted at the interest rate implicit in the lease. Initial direct costs incurred in negotiating and arranging a finance lease are incorporated into the receivable through the discount rate applied to the lease. Finance lease income is recognized over the lease term based on a pattern reflecting a constant periodic rate of return on the net investment in the finance lease. Finance lease income is included in the Consolidated Statement of Income under interest income from loans.

Assets leased to customers under agreements which do not transfer substantially all the risks and rewards of ownership are classified as operating leases. The leased assets are included within property and equipment on the Bank's Consolidated Statement of Financial Position. Rental income is recognized on a straight-line basis over the period of the lease in non-interest income – other in the Consolidated Statement of Income. Initial direct costs incurred in negotiating and arranging an operating lease are added to the carrying amount of the leased asset and recognized as an expense on a straight-line basis over the lease term.

Bank as a lessee

Assets held under finance leases are initially recognized as property and equipment in the Consolidated Statement of Financial Position at an amount equal to the fair value of the leased asset or, if lower, the present value of the minimum lease payments. The corresponding finance lease obligation is included in other liabilities in the Consolidated Statement of Financial Position. The discount rate used in calculating the present value of the minimum lease payments is the interest rate implicit in the lease. Contingent rentals are recognized as expense in the periods in which they are incurred.

Operating lease rentals payable are recognized as an expense on a straight-line basis over the lease term, which commences when the lessee controls the physical use of the asset. Lease incentives are treated as a reduction of rental expense and are also recognized over the lease term on a straight-line basis. Contingent rentals arising under operating leases are recognized as an expense in the period in which they are incurred.

Sale and lease-back

Where the Bank enters into a sale leaseback transaction for a non-financial asset at fair market value that results in the Bank retaining an operating lease (where the buyer/lessor retains substantially all risks and rewards of ownership), any gains and losses are recognized immediately in net income. Where the sale leaseback transaction results in a finance lease, any gain on sale is deferred and recognized in net income over the remaining term of the lease.

Leasehold improvements

Leasehold improvements are investments made to customize buildings and offices occupied under operating lease contracts to make them suitable for their intended purpose. The present value of estimated reinstatement costs to bring a leased property into its original condition at the end of the lease, if required, is capitalized as part of the total leasehold improvements costs. At the same time, a corresponding liability is recognized to reflect the obligation incurred. Reinstatement costs are recognized in net income through depreciation of the capitalized leasehold improvements over their estimated useful life.

Provisions

A provision, including for restructuring, is recognized if, as a result of a past event, the Bank has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation.

The amount recognized as a provision is the Bank's best estimate of the consideration required to settle the present obligation, taking into account the risks and uncertainties surrounding the obligation. If the effect of the time value of money is considered material, provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and, where appropriate, the risks specific to the liability. The increase in the provision due to the passage of time is recorded as interest expense – other in the Consolidated Statement of Income.

Insurance contracts

Gross premiums for life insurance contracts are recognized as income when due. Gross premiums for non-life insurance business, primarily property and casualty, are recognized as income over the term of the insurance contracts. Unearned premiums represent the portion of premiums written in the current year that relate to the period of risk after the reporting date. Insurance claims recoveries are accounted as income in the same period as the related claims.

Gross insurance claims for life insurance contracts reflect the cost of all claims arising during the year. Gross insurance claims for property and casualty insurance contracts include paid claims and movements in outstanding claim liabilities. Insurance premiums ceded to reinsurers are accounted as an expense in the same period as the premiums for the direct insurance contracts to which they relate.

Guarantees

A guarantee is a contract that contingently requires the Bank to make specified payments to reimburse the holder for a loss it incurs because a specified debtor failed to make payment when due in accordance with the original or modified terms of a debt instrument. Guarantees include standby letters of credit, letters of guarantee, indemnifications, credit enhancements and other similar contracts. Guarantees that qualify as a derivative are accounted for in accordance with the policy for derivative instruments. For guarantees that do not qualify as a derivative, a liability is recorded for the fair value of the obligation assumed at inception. The fair value of the obligation at inception is generally based on the discounted cash flow of the premium to be received for the guarantee, resulting in a corresponding asset. Subsequent to initial recognition, such guarantees are measured at the higher of the initial amount, less amortization to recognize any fee income earned over the period, and the best estimate of the amount required to settle any financial obligation arising as a result of the guarantee. Any increase in the liability is reported in the Consolidated Statement of Income.

Employee benefits

The Bank provides pension and other benefit plans for eligible employees in Canada and internationally. Pension benefits are offered in the form of defined benefit pension plans (generally based on an employee's length of service and average earnings at retirement), and in the form of defined contribution pension plans (where the Bank's contribution is fixed and there is no legal or constructive obligation to pay further amounts). Other benefits provided include post-retirement health care, dental care and life insurance, along with other long-term employee benefits such as long-term disability benefits.

Defined benefit pension plans and other post-retirement benefit plans

The cost of these employee benefits is actuarially determined each year using the projected unit credit method. The calculation uses management's best estimate of a number of assumptions – including the discount rate, future compensation, health care costs, mortality, as well as the retirement age of employees. The most significant assumption is the discount rate used to determine the defined benefit obligation, which is set by reference to the yields on high quality corporate bonds that have durations that match the terms of the Bank's obligations. Separate discount rates are used to determine the annual benefit expense in Canada and the US. These rates are determined with reference to the yields on high quality corporate bonds with durations that match the various components of the annual benefit expense. The discount rate used to determine the annual benefit expense for all other plans is the same as the rate used to determine the defined benefit obligation at the beginning of the period.

The Bank's net asset or liability in respect of employee benefit plans is calculated separately for each plan as the difference between the present value of future benefits earned in respect of service for prior periods and the fair value of plan assets. The net asset or liability is included in other assets and other liabilities, as appropriate, in the Consolidated Statement of Financial Position. When the net amount in the Consolidated Statement of Financial Position is an asset, the recognized asset is limited to the present value of any economic benefits available in the form of refunds from the plan or reductions in future contributions to the plan.

The current service cost, net interest expense (income), past service cost, and administrative expense are recognized in net income. Net interest expense (income) is calculated by applying the discount rate at the beginning of the annual period to the net defined benefit asset or liability. When the benefits of a plan are improved (reduced), a past service cost (credit) is recognized immediately in net income.

Remeasurements comprising of actuarial gains and losses, the effect of the asset ceiling and the return on plan assets in excess of the interest income on the fair value of assets are recognized immediately in the Consolidated Statement of Financial Position with a charge or credit to the Statement of Comprehensive Income (OCI) in the period in which they occur. Amounts recorded in OCI are not recycled to the Consolidated Statement of Income.

Other long-term employee benefits

Other long-term employee benefits are accounted for similarly to defined benefit pension plans and other post-retirement benefit plans described above, except that remeasurements are recognized in the Consolidated Statement of Income in the period in which they arise.

Defined contribution plans

The cost of such plans are equal to contributions payable by the Bank to employees' accounts for service rendered during the period and expensed.

Short-term employee benefits
Short-term employee benefits are expensed as the related service is provided and a liability is measured on an undiscounted basis net of payments made.

Recognition of income and expenses

Revenue is recognized to the extent that it is probable that the economic benefits will flow to the Bank and the revenue can be reliably measured. The following specific criteria must also be met before revenue is recognized:

Interest and similar income and expenses
For all non-trading interest-bearing financial instruments, interest income or expense is recorded in net interest income using the effective interest rate. This is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument or a shorter period, where appropriate, to the net carrying amount of the financial asset or financial liability. The calculation takes into account all the contractual terms of the financial instrument (for example, prepayment options) and includes any fees or incremental costs that are directly attributable to the instrument and are an integral part of the effective interest rate, but not future credit losses.

For trading financial instruments, mark-to-market changes including related interest income or expense are recorded in non-interest income – trading revenues.

The carrying amount of interest-bearing financial instruments, measured at amortized cost or classified as FVOCI, is adjusted if the Bank revises its estimates of payments or receipts. The adjusted carrying amount is calculated based on the original effective interest rate and the change in carrying amount is recorded as non-interest income in the Consolidated Statement of Income.

Once the carrying value of a financial asset or a group of similar financial assets has been reduced due to an impairment loss, interest income continues to be recognized based on net effective interest rate inherent in the investment.

Loan origination costs are deferred and amortized into interest income using the effective interest method over the expected term of the loan. Loan fees are recognized in interest income over the appropriate lending or commitment period. Mortgage prepayment fees are recognized in interest income when received, unless they relate to a minor modification to the terms of the mortgage, in which case the fees are deferred and amortized using the effective interest method over the remaining period of the original mortgage.

Loan syndication fees are recognized when no other services are required of the Bank and the fees are non-refundable unless the yield we retain is less than that of comparable lenders in the syndicate. In such cases, an appropriate portion will be deferred and amortized in interest income over the term of the loan.

Loan commitment fees for loans that are likely to be drawn down and other credit related fees are deferred (together with any incremental costs) and recognized as part of the effective interest on the loan. When it is unlikely that a loan will be drawn down, the loan commitment fees are recognized over the commitment period on a straight-line basis.

Fee and commission revenues
The Bank earns fee and commission revenues from a diverse range of services it provides to its customers. Fee income can be divided into the following two categories:

Fees earned for the provision of services over a period of time are accrued over that period the services are provided. These fees include commission income, investment management, custody and other management and advisory fees. Investment management fees and custodial fees are mainly calculated as a percentage of daily or period-end market value of the assets under management (AUM) or assets under administration (AUA) and are received monthly, quarterly, semi-annually, or annually based on the underlying investment management contracts. Performance-based fees related to AUM are earned based on exceeding certain benchmarks or other performance targets, and are recognized at the end of the performance period in which the target is met.

Fees arising from negotiating or participating in the negotiation of a transaction for a third-party, such as the arrangement of the acquisition of shares or other securities or the purchase or sale of businesses, are recognized on completion of the underlying transaction. Fees or components of fees that are linked to a certain performance are recognized after fulfilling the corresponding criteria.

Fee and commission expenses
Fee and commission expenses relate to transaction and service fees which are expensed as the services are received.

Dividend income
Dividend income on equity securities is recognized in Interest income when the Bank's right to receive payment is established.

Share-based payments
Share-based payments awarded to employees are recognized as compensation expense in the Consolidated Statement of Income over the vesting period based on the number of awards expected to vest including the impact of expected forfeitures. For awards that are delivered in tranches, each tranche is considered a separate award and accounted for separately.

Stock appreciation rights and other awards that must be settled for cash are classified as liabilities. Liability-classified awards are re-measured to fair value at each reporting date while they remain outstanding, with any changes in fair value recognized in compensation expense in the period. The liability is expensed over the vesting period which incorporates the re-measurement of the fair value and a revised forfeiture rate that anticipates units expected to vest.

Employee stock options with tandem stock appreciation rights give the employee the right to exercise for shares or settle in cash. These options are classified as liabilities and are re-measured to fair value at each reporting date while they remain outstanding. If an option is exercised, thereby cancelling the tandem stock appreciation right, both the exercise price proceeds together with the accrued liability and associated taxes are credited to equity – common shares in the Consolidated Statement of Financial Position.

Plain vanilla options and other awards that must be settled for shares are classified as equity awards. Equity-classified awards are expensed based on the grant date fair value with a corresponding increase to equity – other reserves in the Consolidated Statement of Financial Position. If an option is exercised, both the exercise price proceeds together with the amount recorded in other reserves is credited to equity – common shares in the Consolidated Statement of Financial Position.

For tandem stock appreciation rights, stock appreciation rights and plain vanilla options, the Bank estimates fair value using an option pricing model. The option pricing model requires inputs such as the exercise price of the option, the current share price, the risk free interest rate, expected dividends, expected volatility (calculated using an equal weighting of implied and historical volatility) and specific employee exercise behaviour patterns based on statistical data. For other awards, fair value is the quoted market price of the Bank's common shares at the reporting date.

Where derivatives are used to economically hedge share-based payment expense, related mark-to-market gains and losses are included in non-interest expenses – salaries and employee benefits in the Consolidated Statement of Income.

A voluntary renouncement of a tandem stock appreciation right where an employee retains the corresponding option for shares with no change in the overall fair value of the award, results in a reclassification of the accrued liability and associated tax to equity – other reserves in the Consolidated Statement of Financial Position. This reclassification is measured at the fair value of the renounced awards as of the renouncement date. Subsequent to the voluntary renouncement, these awards are accounted for as plain vanilla options, based on the fair value as of the renouncement date.

Customer loyalty programs

The Bank operates loyalty points programs, which allow customers to accumulate points when they use the Bank's products and services. The points can then be redeemed for free or discounted products or services, subject to certain conditions.

Consideration received is allocated between the products sold or services rendered and points issued, with the consideration allocated to points equal to their fair value. The fair value of points is generally based on equivalent retail prices for the mix of awards expected to be redeemed. The fair value of the points issued is deferred in other liabilities and recognized as banking revenues when the points are redeemed or lapsed. Management judgment is involved in determining the redemption rate to be used in the estimate of points to be redeemed.

Dividends on shares

Dividends on common and preferred shares and other equity instruments are recognized as a liability and deducted from equity when they are declared and no longer at the discretion of the Bank.

Segment reporting

Management's internal view is the basis for the determination of operating segments. The operating segments are those whose operating results are regularly reviewed by the Bank's chief operating decision-maker to make decisions about resources to be allocated to the segment and assess its performance. The Bank has three operating segments: Canadian Banking, International Banking, and Global Banking and Markets. The other category represents smaller operating segments, including Group Treasury and other corporate items, which are not allocated to an operating segment. These segments offer different products and services and are managed separately based on the Bank's management and internal reporting structure.

The results of these business segments are based upon the internal financial reporting systems of the Bank. The accounting policies used in these segments are generally consistent with those followed in the preparation of the consolidated financial statements by the Bank. The only notable accounting measurement difference is the grossing up of revenues which are tax-exempt and income from associate corporations to an equivalent before-tax basis for those affected segments. This change in measurement enables comparison of income arising from taxable and tax-exempt sources.

Because of the complexity of the Bank, various estimates and allocation methodologies are used in the preparation of the business segment financial information. The funding value of assets and liabilities is transfer-priced at wholesale market rates, and corporate expenses are allocated to each segment on an equitable basis using various parameters. As well, capital is apportioned to the business segments on a risk-based methodology. Transactions between segments are recorded within segment results as if conducted with a third-party and are eliminated on consolidation.

Earnings per share (EPS)

Basic EPS is computed by dividing net income for the period attributable to the Bank's common shareholders by the weighted-average number of common shares outstanding during the period.

Diluted EPS is calculated by dividing adjusted net income for the period attributable to common shareholders by the weighted-average number of diluted common shares outstanding for the period. In the calculation of diluted earnings per share, earnings are adjusted for changes in income or expenses that would result from the issuance of dilutive shares. The weighted-average number of diluted common shares outstanding for the period reflects the potential dilution that would occur if options, securities or other contracts that entitle their holders to obtain common shares had been outstanding from the beginning of the period (or a later date) to the end of the period (or an earlier date). Instruments determined to have an antidilutive impact for the period are excluded from the calculation of diluted EPS.

Earnings are adjusted by the after-tax amount of distributions related to dilutive capital instruments recognized in the period. For tandem stock appreciation rights that are carried as liabilities, the after-tax re-measurement included in salaries and employee benefits expense, net of related hedges, is adjusted to reflect the expense had these rights been equity-classified.

The number of additional shares for inclusion in diluted EPS for share-based payment options is determined using the treasury share method. Under this method, the net number of incremental common shares is determined by assuming that in-the-money stock options are exercised and the proceeds are used to purchase common shares at the average market price during the period.

The number of additional shares associated with capital instruments that potentially result in the issuance of common shares is based on the terms of the contract. On occurrence of contingencies as specified in the Non-Viability Contingent Capital (NVCC) Instruments, the number of additional common shares associated with the NVCC subordinated debentures, NVCC subordinated additional Tier 1 capital securities and NVCC preferred shares is based on an automatic conversion formula as set out in the respective prospectus supplements.

4 Transition to IFRS 9

(a) Reconciliation of IAS 39 to IFRS 9

The following table provides the impact from the transition to IFRS 9 on the Consolidated Statement of Financial Position at transition date, November 1, 2017. The impact consists of reclassification and remeasurement.

Reclassification:

These adjustments reflect the movement of balances between categories on the Consolidated Statement of Financial Position with no impact to shareholders' equity. There is no change to the carrying value of the balances as a result of the reclassification.

Remeasurement:
These adjustments, which include expected credit loss, result in a change to the carrying value of the item on the Statement of Financial Position with an impact to shareholders' equity net of tax.

As at November 1, 2017 ($ millions)	Note	IAS 39 Measurement basis	IAS 39 Carrying amount	Reclassification	Remeasurement	IFRS 9 Carrying amount	IFRS 9 Measurement basis	IFRS 9
Assets								
Cash and deposits with financial institutions		Amortized cost	$ 59,663	$ –	$ (3)	$ 59,660	Amortized cost	Cash and deposits with financial institutions*
Precious metals		FVTPL	5,717	–	–	5,717	FVTPL	Precious metals
Trading Assets								Trading assets
Debt securities	1	FVTPL	39,333	76	–	39,409	FVTPL	Debt securities
Equity securities		FVTPL	39,319	–	–	39,319	FVTPL	Equity securities
Loans	3	FVTPL	17,312	660	1	17,973	FVTPL	Loans
Other		FVTPL	2,500	–	–	2,500	FVTPL	Other
			98,464	736	1	99,201		
Financial assets designated at FVTPL								Financial assets designated at FVTPL
Debt securities		FVTPL (Designated)	13	–	–	13	FVTPL (Designated)	Debt securities
Securities purchased under resale agreements and securities borrowed		Amortized cost	95,319	–	–	95,319	Amortized cost	Securities purchased under resale agreements and securities borrowed*
Derivative financial instruments	3	FVTPL	35,364	(2)	–	35,362	FVTPL	Derivative financial instruments
Investment securities								Investment securities
Debt securities	1,5,8	Amortized cost	18,765	4,205	118	23,088	Amortized cost	Debt securities*
Debt securities	1	FVOCI	49,193	(4,281)	–	44,912	FVOCI	Debt securities
Equity securities	2	FVOCI	1,311	(301)	–	1,010	FVOCI	Equity securities
Equity securities	2	FVOCI	–	301	–	301	FVTPL	Equity securities
			69,269	(76)	118	69,311		
Loans								Loans
Residential mortgages	3,4	Loans & receivables	236,916	(33)	(134)	236,749	Amortized cost	Residential mortgages
Personal loans	4	Loans & receivables	89,227	–	2	89,229	Amortized cost	Personal loans
Credit cards	4	Loans & receivables	14,104	–	–	14,104	Amortized cost	Credit cards
Business and government	3	Loans & receivables	168,449	(623)	–	167,826	Amortized cost	Business and government
			508,696	(656)	(132)	507,908		
Allowance for credit loss	5	Loans & receivables	(4,327)	–	(593)	(4,920)	Amortized cost	Allowance for credit loss
Other								Other
Customers' liability under acceptances	5	Amortized cost	13,560	–	(16)	13,544	Amortized cost	Customer's liability under acceptances*
Property and equipment			2,381	–	–	2,381		Property and equipment
Investment in associates	5		4,586	–	(184)	4,402		Investment in associates
Goodwill and other intangible assets			12,106	–	–	12,106		Goodwill and other intangible assets
Deferred tax assets	1,6		1,713	–	50	1,763		Deferred tax assets
Other assets	5		12,749	–	(2)	12,747		Other assets
			47,095	–	(152)	46,943		
Total assets			$ 915,273	$ 2	$ (761)	$ 914,514		

As at November 1, 2017 ($ millions)	Note	IAS 39 Measurement basis	IAS 39 Carrying amount	Reclassification	Remeasurement	IFRS 9 Carrying amount	IFRS 9 Measurement basis	IFRS 9
Liabilities								
Deposits		Amortized cost	$ 625,367	$ –	$ –	$ 625,367	Amortized cost	Deposits
Financial instruments designated at fair value through profit or loss		FVTPL	4,663	–	–	4,663	FVTPL	Financial instruments designated at fair value through profit or loss
Other								Other
Acceptances		Amortized cost	13,560	–	–	13,560	Amortized cost	Acceptances
Obligations related to securities sold short		Amortized cost	30,766	–	–	30,766	Amortized cost	Obligations related to securities sold short
Derivative financial instruments	3	FVTPL	34,200	(2)	–	34,198	FVTPL	Derivative financial instruments
Obligations related to securities sold under repurchase agreements and securities lent		Amortized cost	95,843	–	–	95,843	Amortized cost	Obligations related to securities sold under repurchase agreements and securities lent
Subordinated debentures		Amortized cost	5,935	–	–	5,935	Amortized cost	Subordinated debentures
Other liabilities	7		43,314	4	(151)	43,167		Other liabilities
Total liabilities			853,648	2	(151)	853,499		
Equity								
Common equity								Common equity
Common shares			15,644	–	–	15,644		Common shares
Retained earnings	1,2		38,117	49	(613)	37,553		Retained earnings
Accumulated other comprehensive income	1,2		1,577	(49)	100	1,628		Accumulated other comprehensive income
Other reserves			116	–	–	116		Other reserves
Total common equity			55,454	–	(513)	54,941		Total common equity
Preferred shares			4,579	–	–	4,579		Preferred shares
Total equity attributable to equity holders to the Bank			60,033	–	(513)	59,520		Total equity attributable to equity holders to the Bank
Non-controlling interests in subsidiaries			1,592	–	(97)	1,495		Non-controlling interests in subsidiaries
			61,625	–	(610)	61,015		
Total liabilities and equity			$ 915,273	$ 2	$ (761)	$ 914,514		

* Net of applicable allowance for credit losses.

(1) AFS Debt instruments of $4,281 measured at fair value through other comprehensive income (FVOCI) were reclassified to amortized cost in the amount of $4,205 and $76 to fair value through profit or loss (FVTPL). The reclassifications were due to the business model being "held-to-collect" and the cash flows that did not represent payments that are solely payments of principal and interest (SPPI). The reclassification of debt instruments to amortized cost resulted in remeasurement of $118 with an offset to other comprehensive income (AOCI) and deferred tax assets. The reclassification of AOCI to retained earnings related to FVTPL classification.

(2) AFS Equity instruments of $301 previously fair valued through OCI are now classified as FVTPL, which resulted in reclassification of AOCI to retained earnings.

(3) Certain precious metal loans of $627 and the related derivatives that failed the SPPI test were classified to FVTPL, and $33 of residential mortgages were reclassified to trading to reflect the business model.

(4) Adjustments to certain balances against allowance for credit losses.

(5) Expected credit loss on financial assets and the Bank's share of associated corporations.

(6) The increase in deferred tax assets relates to the impact of the IFRS 9 related adjustments to retained earnings.

(7) The decrease in remeasurement of $151 is comprised of a reduction in deferred tax liabilities of $129, a net decrease of $22 which includes allowance for credit losses related to undrawn commitments, letters of credit and letters of guarantee.

(8) Debt securities managed under a business model of held-to-collect were reclassifed from available-for-sale to amortized cost. As of October 31, 2018, the fair value of these securities was $3,951. For the year ended October 31, 2018, $67 of losses would have been recognized in other comprehensive income if the securities had not been reclassified.

(b) Reconciliation of impairment allowance balance from IAS 39 to IFRS 9

The following table reconciles the closing impairment allowance for financial assets in accordance with IAS 39 and provisions for loan commitments and financial guarantee contracts in accordance with IAS 37 *Provisions, Contingent Liabilities and Contingent Assets* as at October 31, 2017 to the opening impairment allowance under IFRS 9 as at November 1, 2017.

($ millions)	Impairment allowance under IAS 39 as at October 31, 2017	Remeasurement	Impairment allowance under IFRS 9 as at November 1, 2017
Loans and acceptances[1]	$ 4,327	$ 611	$ 4,938
Investment securities (Debt) at amortized cost	–	1	1
Investment securities (Debt) at FVOCI[2]	–	13	13
Deposits with financial institutions	–	3	3
Off-balance sheet credit risks[3]	120	(36)	84
Total	$ 4,447	$ 592	$ 5,039

(1) The remeasurement impact of $611 is comprised of loans $593, acceptances $16 and accrued interest of $2.
(2) The allowance for credit losses of $13 is recorded in accumulated other comprehensive income. These debt securities remain at fair value on the balance sheet.
(3) Off-balance sheet credit risks include credit risks such as undrawn lending commitments, letters of credit and letters of guarantee.

5 Future Accounting Developments

The Bank actively monitors developments and changes in accounting standards from the IASB, as well as requirements from the other regulatory bodies, including OSFI. The Bank is currently assessing the measurement impact of the adoption of new standards issued by the IASB will have on its consolidated financial statements and also evaluating the alternative elections available on transition.

Effective November 1, 2018

Revenue from contracts with customers

The IASB issued IFRS 15 *Revenue from Contracts with Customers* (IFRS 15), which replaces the previous revenue standard IAS 18 *Revenue*, and the related Interpretations on revenue recognition.

The standard is a control-based model as compared to the existing revenue standard which is primarily focused on risks and rewards and provides a single principle based framework to be applied to all contracts with customers that are in scope of the standard. Under the new standard, revenue is recognized when a customer obtains control of a good or service. Transfer of control occurs when the customer has the ability to direct the use of and obtain the benefits of the good or service. The standard introduces a new five step model governing revenue recognition to be applied to contracts with customers. The Bank must also determine whether its performance obligation is to provide the service itself (i.e. the Bank acts as a principal) or to arrange another party to provide the service (i.e. the Bank acts as an agent).

The Bank has assessed the scope of the new guidance to be limited to fees and commission revenues from wealth management and banking services in Canadian and International Banking and underwriting and advisory fees in Global Banking and Markets.

The Bank will adopt the standard and its amendments as of November 1, 2018 using the modified retrospective approach. Under this approach, the Bank will recognize the cumulative effect of initially applying the standard as an adjustment to the opening balance of retained earnings as of November 1, 2018, without restating comparative periods. As of November 1, 2018, the opening balance of retained earnings is expected to decrease by approximately $60 million (net of tax). The decrease in retained earnings relates to certain costs no longer eligible for deferral under the new standard and the re-measurement of certain liabilities at fulfilment cost.

The presentation of certain costs will also change prospectively from non-interest expenses to non-interest income where amounts are deemed to be part of consideration payable to customers or the Bank is deemed to be acting as an agent. This presentation change will not have a material impact on the Bank's consolidated financial statements.

Effective November 1, 2019

Financial instruments: Prepayment features with negative compensation

On October 12, 2017, the IASB issued an amendment to IFRS 9 *Financial Instruments*. The amendment allows certain pre-payable financial assets with so-called negative compensation prepayment option to be measured at amortized cost or fair value through other comprehensive income, if the prepayment amount substantially represents unpaid principal and interest and reasonable compensation. Reasonable compensation may be positive or negative. Prior to this amendment financial assets with this negative compensation feature would have failed the solely payments of principal and interest test and be mandatorily measured at fair value through profit or loss. The amendment will be effective for annual periods beginning on or after January 1, 2019, with early adoption permitted. Based on preliminary assessments, the amendment is not expected to impact the Bank.

Leases

On January 13, 2016, the IASB issued IFRS 16 *Leases*, which requires a lessee to recognize an asset for the right to use the leased item and a liability for the present value of its future lease payments. IFRS 16 will result in leases being recorded on the Bank's balance sheet, including those currently classified as operating leases except for short-term leases and leases with low value of the underlying asset. IFRS 16 substantially carries forward the lessor accounting requirements in IAS 17.

IFRS 16 is effective for the Bank on November 1, 2019. On transition, there are practical expedients available whereby the Bank will not need to reassess whether a contract is, or contains a lease, or reassess the accounting of sale leaseback transactions recognized prior to the date of initial application. A lessee will apply IFRS 16 to its leases either retrospectively to each prior reporting period presented; or retrospectively with the cumulative effect of initially applying IFRS 16 being recognized at the date of initial application.

The Bank is currently in the process of assessing existing contractual relationships to identify the existing population of leases that would be recorded on the balance sheet under the new standard. The Bank continues to evaluate the potential impact to the existing IT systems and processes and next steps include performing an initial quantification of the existing obligations and reviewing the additional disclosures required by the new standard. During 2019, the Bank will also complete its assessment of various practical expedients and formulate its accounting policies under IFRS 16.

IFRIC 23 Uncertainty over income tax treatments

On June 7, 2017, the IASB issued IFRIC 23 that is effective for the Bank beginning November 1, 2019. The interpretation clarifies the accounting for uncertainties over income taxes. The interpretation clarifies application of recognition and measurement requirements in IAS 12 income taxes when there is uncertainty over income tax treatments. The Bank is currently assessing the impact of the interpretation.

Employee Benefits

On February 7, 2018, the IASB issued narrow-scope amendments to pension accounting that is effective for the Bank beginning November 1, 2019. The amendments relate to when a plan amendment, curtailment or settlement has occurred. In such instances, the Bank is required to use updated assumptions to determine current service cost and net interest for the remainder of the reporting period after the change to the plan. For the Bank, the narrow scope amendments are to be applied prospectively to plan amendments, curtailments and settlements occurring after November 1, 2019.

Effective November 1, 2020

Conceptual Framework

On March 29, 2018, the IASB issued the revised Conceptual Framework for Financial Reporting (Framework) that is effective for the Bank beginning November 1, 2020. The Framework itself is not a standard, and does not override existing standards. It is used by the IASB in developing accounting standards. The Bank is currently assessing the impact of the revisions.

Definition of business

On October 22, 2018, the IASB issued a narrow-scope amendment to IFRS 3 Business Combination. The amendments will help companies determine whether an acquisition is of a business or a group of assets. Distinguishing between a business and a group of assets is important because an acquirer recognizes goodwill only when acquiring a business. The amendments apply to transactions for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after January 1, 2020. Earlier adoption is permitted. The Bank is currently assessing the impact.

Definition of material

On October 31, 2018, the IASB issued amendments to IAS 1 Presentation of Financial Statements and IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors, clarifying the definition of material. Under the new definition, information is material if omitting, misstating or obscuring it could reasonably be expected to influence the decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity. The explanations accompanying the definition have also been improved. The amendments are effective prospectively for annual periods beginning on or after January 1, 2020. Earlier adoption is permitted. The Bank is currently assessing the impact.

Effective November 1, 2021

Insurance Contracts

On May 18, 2017, the IASB issued IFRS 17 Insurance Contracts, which provides a comprehensive principle-based framework for the measurement and presentation of all insurance contracts. The new standard will replace IFRS 4 Insurance Contracts and requires insurance contracts to be measured using current fulfillment cash flows and for revenue to be recognized as the service is provided over the coverage period. On November 14, 2018, the IASB tentatively decided to defer the effective date, by one year, to annual periods on or after January 1, 2022. The Bank will continue to track the IASB Board's meeting agenda items on issues and discussions related to the standard, further updates will be provided in Q1 2019.

The IFRS 17 project structure and governance has been established along with a Project Management Office to assist the Executive Steering and Project Operations Committees. The committees comprise of representatives from Global Finance, Global Insurance Actuarial Services, Information Technology and the Insurance Business Operations. The Bank is currently in the Evaluation and Design Solution phase of the project, with Implementation planned for Fiscal 2019 through 2022.

6 Cash and Deposits with Financial Institutions

As at October 31 ($ millions)	**2018**	2017
Cash and non-interest-bearing deposits with financial institutions	**$ 8,997**	$ 7,825
Interest-bearing deposits with financial institutions	**53,272**	51,838
Total	**$ 62,269(1)**	$ 59,663

(1) Net of impairment allowances of $3.

The Bank is required to maintain balances with central banks, other regulatory authorities and certain counterparties and these amounted to $8,886 million (2017 – $7,282 million).

7 Fair Value of Financial Instruments

Determination of fair value

The calculation of fair value is based on market conditions at a specific point in time and therefore may not be reflective of future fair values. The Bank has controls and processes in place to ensure that the valuation of financial instruments is appropriately determined.

The best evidence of fair value for a financial instrument is the quoted price in an active market. Unadjusted quoted market prices for identical instruments represent a Level 1 valuation. Where possible, valuations are based on quoted prices or observable inputs obtained from active markets. Independent Price Verification (IPV) is undertaken to assess the reliability and accuracy of prices and inputs used in the determination of fair value. The IPV process is performed by price verification groups that are independent from the business. The Bank maintains a list of pricing sources that are used in the IPV process. These sources include, but are not limited to, brokers, dealers and consensus pricing services. The valuation policies relating to the IPV process require that all pricing or rate sources used be external to the Bank. On a periodic basis, an independent assessment of pricing or rate sources is performed to determine market presence or market representative levels.

Quoted prices are not always available for over-the-counter transactions, as well as transactions in inactive or illiquid markets. In these instances, internal models that maximize the use of observable inputs are used to estimate fair value. The chosen valuation technique incorporates all the factors that market participants would take into account in pricing a transaction. When all significant inputs to models are observable, the valuation is classified as Level 2. Financial instruments traded in a less active market are valued using indicative market prices, present value of cash-flows or other valuation techniques. Fair value estimates normally do not consider forced or liquidation sales.

Where financial instruments trade in inactive markets or when using models where observable parameters do not exist, greater management judgment is required for valuation purposes. Valuations that require the significant use of unobservable inputs are considered Level 3.

The specific inputs and valuation techniques used in determining the fair value of financial instruments are noted below. For Level 3 instruments, additional information is disclosed in the Level 3 sensitivity analysis on page 175.

The fair values of cash and deposits with banks, securities purchased under resale agreements and securities borrowed, customers' liability under acceptances, obligations related to securities sold under repurchase agreements and securities lent, acceptances, and obligations related to securities sold short are assumed to approximate their carrying values, either due to their short-term nature or because they are frequently repriced to current market rates.

Trading loans

Trading loans as they relate to precious metals (primarily gold and silver) are valued using a discounted cash flow model incorporating market-observable inputs, including precious metals spot and forward prices and interest rate curves (Level 2). Other trading loans that serve as hedges to loan-based credit total return swaps are valued using consensus prices from Bank approved independent pricing services (Level 2).

Government issued or guaranteed securities

The fair values of government issued or guaranteed debt securities are primarily based on unadjusted quoted prices in active markets, where available (Level 1). Where quoted prices are not available, the fair value is determined by utilizing recent transaction prices, broker quotes, or pricing services (Level 2).

For securities that are not actively traded, the Bank uses a discounted cash flow method, using the effective yield of a similar instrument adjusted for instrument-specific risk factors such as credit spread and contracted features (Level 2).

Corporate and other debt

Corporate and other debt securities are valued using unadjusted quoted prices from independent market data providers or third-party broker quotes (Level 1). Where prices are not available consistently, the last available data is used and verified with a yield-based valuation approach (Level 2). In some instances, interpolated yields of similar bonds are used to price securities (Level 2). The Bank uses pricing models with observable inputs from market sources such as credit spread, interest rate curves, and recovery rates (Level 2). These inputs are verified through an IPV process on a monthly basis.

For certain securities where there is no active market, no consensus market pricing and no indicative or executable independent third-party quotes, the Bank uses pricing by third-party providers or internal pricing models and cannot readily observe the market inputs used to price such instruments (Level 3).

Mortgage-backed securities

The fair value of residential mortgage-backed securities is primarily determined using third-party broker quotes and independent market data providers, where the market is more active (Level 2). Where the market is inactive, an internal price-based model is used (Level 3).

Equity securities

The fair value of equity securities is based on unadjusted quoted prices in active markets, where available (Level 1). Where equity securities are less frequently traded, the most recent exchange-quoted pricing is used to determine fair value. Where there is a wide bid-offer spread, fair value is determined based on quoted market prices for similar securities (Level 2).

Where quoted prices in active markets are not readily available, such as for private equity securities, the fair value is determined as a multiple of the underlying earnings or percentage of underlying assets obtained from third-party general partner statements (Level 3).

Income funds

The fair value of income funds is based on observable unadjusted quoted prices where available (Level 1). Where quoted or active market prices are unavailable, the last available Net Asset Value, fund statements and other financial information available from third-party fund managers at the fund level are used in arriving at the fair value.

Derivatives

Fair values of exchange-traded derivatives are based on unadjusted quoted market prices (Level 1). Fair values of over-the-counter (OTC) derivatives or inactive exchange-traded derivatives are determined using pricing models, which take into account input factors such as current market and contractual prices of the underlying instruments, as well as time value and yield curve or volatility factors underlying the positions (Level 2). The

determination of the fair value of derivatives includes consideration of credit risk, estimated funding costs and ongoing direct costs over the life of the instruments.

Derivative products valued using a valuation technique with market-observable inputs mainly include interest rate swaps and options, currency swaps and forward foreign exchange contracts. The most frequently applied valuation techniques include forward pricing and swap models, using present value calculations. The models incorporate various inputs including foreign exchange spot and forward rates and interest rate curves (Level 2).

Derivative products valued using a valuation technique with significant unobservable inputs are long dated contracts (interest rate swaps, currency swaps, forward foreign exchange contracts, option contracts and certain credit default swaps) and other derivative products that reference a basket of assets, commodities or currencies. These models incorporate certain significant non-observable inputs such as volatility and correlation (Level 3).

Loans

The estimated fair value of loans carried at amortized cost reflects changes in the general level of interest rates and credit worthiness of borrowers that have occurred since the loans were originated or purchased. The particular valuation methods used are as follows:

- Canadian fixed rate residential mortgages are fair valued by discounting the expected future contractual cash flows, taking into account expected prepayments and using management's best estimate of average market interest rates currently offered for mortgages with similar remaining terms (Level 3).
- For fixed rate business and government loans, fair value is determined by discounting the expected future contractual cash flows of these loans at interest rates estimated by using the appropriate currency swap curves for the remaining term, adjusted for a credit mark of the expected losses in the portfolio (Level 3).
- For all other fixed rate loans, fair value is determined by discounting the expected future contractual cash flows of these loans at interest rates estimated by using the appropriate currency swap curves for the remaining term (Level 3).
- For all floating rate loans fair value is assumed to equal book value.

The fair value of loans is not adjusted for the value of any credit protection the Bank has purchased to mitigate credit risk.

Deposits

The fair values of deposits payable on demand or after notice or floating rate deposits payable on a fixed date is assumed to equal book value. The estimated fair values of Canadian personal fixed rate deposits payable on a fixed date are fair valued by discounting the expected future contractual cash outflows, using management's best estimate of average market interest rates currently offered for deposits with similar remaining terms (Level 2).

Deposits under the Canada Mortgage Bond (CMB) program are fair valued by discounting expected future contractual cash flows using market observable inputs (Level 2).

For all other fixed rate deposits, fair value is determined by discounting the expected future contractual cash flows of these deposits at interest rates estimated by using the appropriate currency swap curves for the remaining term (Level 2).

For structured notes containing embedded features that are bifurcated from the Plain Vanilla notes, the fair value of the embedded derivatives is determined using option pricing models with inputs similar to other interest rate or equity derivative contracts (Level 2). The fair value of certain embedded derivatives is determined using net asset values (Level 3).

Subordinated debentures and other liabilities

The fair values of subordinated debentures, including debentures issued by subsidiaries which are included in other liabilities, are determined by reference to quoted market prices where available or market prices for debt with similar terms and risks (Level 2). The fair values of other liabilities is determined by the discounted contractual cash flow method with appropriate currency swap curves for the remaining term (Level 2).

Fair value of financial instruments

The following table sets out the fair values of financial instruments of the Bank using the valuation methods and assumptions described above. The fair values disclosed do not include non-financial assets, such as property and equipment, investments in associates, precious metals, goodwill and other intangible assets.

	2018		2017	
As at October 31 ($ millions)	Total fair value	Total carrying value	Total fair value	Total carrying value
Assets:				
Cash and deposits with financial institutions	**$ 62,269**	**$ 62,269**	$ 59,663	$ 59,663
Trading assets	**100,262**	**100,262**	98,464	98,464
Financial instruments designated at fair value through profit or loss	**12**	**12**	13	13
Securities purchased under resale agreements and securities borrowed	**104,018**	**104,018**	95,319	95,319
Derivative financial instruments	**37,558**	**37,558**	35,364	35,364
Investment securities – other	**57,653**	**57,653**	50,504	50,504
Investment securities – amortized cost	**20,316**	**20,743**	18,716	18,765
Loans	**553,758**	**551,834**	507,276	504,369
Customers' liability under acceptances	**16,329**	**16,329**	13,560	13,560
Other financial assets	**10,913**	**10,913**	9,314	9,314
Liabilities:				
Deposits	**674,535**	**676,534**	625,964	625,367
Financial instruments designated at fair value through profit or loss	**8,188**	**8,188**	4,663	4,663
Acceptances	**16,338**	**16,338**	13,560	13,560
Obligations related to securities sold short	**32,087**	**32,087**	30,766	30,766
Derivative financial instruments	**37,967**	**37,967**	34,200	34,200
Obligations related to securities sold under repurchase agreements and securities lent	**101,257**	**101,257**	95,843	95,843
Subordinated debentures	**5,627**	**5,698**	6,105	5,935
Other financial liabilities	**35,432**	**34,805**	27,531	27,118

Changes in interest rates, credit spreads and liquidity costs are the main cause of changes in the fair value of the Bank's financial instruments resulting in a favourable or unfavourable variance compared to carrying value. For the Bank's financial instruments carried at cost or amortized cost, the carrying value is not adjusted to reflect increases or decreases in fair value due to market fluctuations, including those due to interest rate changes. For FVOCI investment securities, derivatives and financial instruments measured at FVTPL or designated as fair value through profit or loss, the carrying value is adjusted regularly to reflect the fair value.

Fair value hierarchy

The following table outlines the fair value hierarchy of instruments carried at fair value on a recurring basis and of instruments not carried at fair value.

	2018[1]				2017			
As at October 31 ($ millions)	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Instruments carried at fair value on a recurring basis:								
Assets:								
Precious metals[2]	$ –	$ 3,175	$ 16	$ 3,191	$ –	$ 5,717	$ –	$ 5,717
Trading assets								
Loans	–	14,334	–	14,334	–	17,312	–	17,312
Canadian federal government and government guaranteed debt	13,003	–	–	13,003	10,343	–	–	10,343
Canadian provincial and municipal debt	–	10,159	–	10,159	–	7,325	–	7,325
US treasury and other US agencies' debt	7,164	–	–	7,164	6,894	–	–	6,894
Other foreign governments' debt	4,610	1,833	–	6,443	5,680	1,149	–	6,829
Corporate and other debt	3	8,984	18[3]	9,005	44	7,920	22	7,986
Income funds	29	–	–	29	180	165	–	345
Equity securities	39,513	158	–	39,671	38,760	170	–	38,930
Other[4]	454	–	–	454	2,500	–	–	2,500
	$ 64,776	$ 38,643	$ 34	$ 103,453	$ 64,401	$ 39,758	$ 22	$ 104,181
Financial assets designated at fair value through profit or loss	$ 12	$ –	$ –	$ 12	$ 13	$ –	$ –	$ 13
Investment securities[5]								
Canadian federal government and government guaranteed debt	6,373	2,518	–	8,891	9,677	2,416	–	12,093
Canadian provincial and municipal debt	366	3,986	–	4,352	593	4,230	–	4,823
US treasury and other US agencies' debt	18,472	669	–	19,141	6,305	367	–	6,672
Other foreign governments' debt	10,457	9,485	48[6]	19,990	10,944	8,746	113	19,803
Corporate and other debt	732	1,818	13[3]	2,563	750	3,584	53	4,387
Mortgage-backed securities	–[7]	906	–	906	539	876	–	1,415
Equity securities	838	263	709	1,810	590	177	544	1,311
	$ 37,238	$ 19,645	$770	$ 57,653	$ 29,398	$ 20,396	$ 710	$ 50,504
Derivative financial instruments								
Interest rate contracts	$ –	$ 8,927	$112	$ 9,039	$ –	$ 9,742	$ 36	$ 9,778
Foreign exchange and gold contracts	5	22,197	–	22,202	4	21,496	–	21,500
Equity contracts	797	1,556	8	2,361	615	1,720	–	2,335
Credit contracts	–	349	–	349	–	175	–	175
Commodity contracts	92	3,515	–	3,607	133	1,443	–	1,576
	$ 894	$ 36,544	$120	$ 37,558	$ 752	$ 34,576	$ 36	$ 35,364
Liabilities:								
Deposits[8]	$ –	$ (401)	$ –	$ (401)	$ –	$ (7)	$ –	$ (7)
Financial liabilities designated at fair value through profit or loss	–	8,188	–	8,188	–	4,663	–	4,663
Obligations related to securities sold short	24,563	7,524	–	32,087	27,796	2,970	–	30,766
Derivative financial instruments								
Interest rate contracts	–	11,012	74	11,086	–	10,823	267	11,090
Foreign exchange and gold contracts	–	20,537	–	20,537	3	17,646	–	17,649
Equity contracts	1,057	1,884	5	2,946	502	2,724	7	3,233
Credit contracts	–	70	–	70	–	179	–	179
Commodity contracts	34	3,294	–	3,328	268	1,781	–	2,049
	$ 1,091	$ 36,797	$ 79	$ 37,967	$ 773	$ 33,153	$ 274	$ 34,200
Instruments not carried at fair value[9]:								
Assets:								
Investment securities – amortized cost	$ 7,392[7]	$ 12,815	$109[6]	$ 20,316	$ 4,240	$ 14,476	$ –	$ 18,716
Loans[10]	–	313,490	–	313,490	–	–	286,621	286,621
Liabilities:								
Deposits[10][11]	–	293,898	–	293,898	–	266,995	–	266,995
Subordinated debentures	–	5,627	–	5,627	–	6,105	–	6,105
Other liabilities	–	20,383	–	20,383	–	13,363	–	13,363

(1) The amounts for October 31, 2018 have been prepared in accordance with IFRS 9, prior periods have not been restated (refer to Notes 3 and 4).
(2) The fair value of precious metals is determined based on quoted market prices and forward spot prices, where applicable.
(3) IFRS 9 adoption resulted in reclassification of $17 million of corporate and other debt to trading assets in Level 3 from available-for-sale debt securities (refer to Note 4).
(4) Represents energy related assets for the year ended October 31, 2018 (October 31, 2017 – represents base metal positions).
(5) Excludes debt investment securities measured at amortized cost of $20,743 (held-to-maturity as at October 31, 2017 – $18,765).
(6) IFRS 9 adoption resulted in reclassification of $104 million of other foreign governments' debt in Level 3 to debt securities measured at amortized cost (refer to Note 4).
(7) IFRS 9 adoption resulted in reclassification of $539 million of mortgage backed securities in Level 1 to debt securities measured at amortized cost (refer to Note 4).
(8) These amounts represent embedded derivatives bifurcated from structured notes.
(9) Represents the fair value of financial assets and liabilities where the carrying amount is not a reasonable approximation of fair value.
(10) Excludes floating rate instruments as carrying value approximates fair value.
(11) Excludes embedded derivatives bifurcated from structured notes.

Level 3 instrument fair value changes

Financial instruments categorized as Level 3 as at October 31, 2018, in the fair value hierarchy comprise certain precious metals, illiquid government bonds, highly-structured corporate bonds, illiquid investments in private equity securities, and complex derivatives.

The following table summarizes the changes in Level 3 instruments carried at fair value for the year ended October 31, 2018.

All positive balances represent assets and negative balances represent liabilities. Consequently, positive amounts indicate purchases of assets or settlements of liabilities and negative amounts indicate sales of assets or issuances of liabilities.

	As at October 31, 2018[1]							
($ millions)	Fair value November 1 2017	Gains/(losses) recorded in income	Gains/(losses) recorded in OCI	Purchases/ Issuances	Sales/ Settlements	Transfers into/out of Level 3	Fair value October 31 2018	Change in unrealized gains/(losses) recorded in income for instruments still held[2]
Precious metals	$ –	**$ –**	**$ –**	**$ 5**	**$ (8)**	**$ 19**	**$ 16**	**$ –**
	–	**–**	**–**	**5**	**(8)**	**19**	**16**	**–**
Trading assets								
Loans	–	**–**	**–**	**–**	**(2)**	**2**	**–**	**–**
Corporate and other debt	39	**(10)**	**–**	**–**	**(16)**	**5**	**18**	**–**
	39	**(10)**	**–**	**–**	**(18)**	**7**	**18**	**–**
Investment securities								
Other foreign governments' debt	9	**–**	**–**	**61**	**(22)**	**–**	**48**	**n/a**
Corporate and other debt	36	**–**	**(5)**	**–**	**(18)**	**–**	**13**	**n/a**
Equity securities	544	**16**	**18**	**218[3]**	**(67)**	**(20)**	**709**	**14**
	589	**16**	**13**	**279**	**(107)**	**(20)**	**770**	**14**
Derivative financial instruments – assets								
Interest rate contracts	36	**67**	**–**	**31**	**(22)**	**–**	**112**	**58**
Equity contracts	–	**(2)**	**–**	**4**	**–**	**6**	**8**	**(2)[4]**
Derivative financial instruments – liabilities								
Interest rate contracts	(267)	**(108)**	**–**	**(24)**	**22**	**303**	**(74)**	**(26)[5]**
Foreign exchange and gold contracts	–	**–**	**–**	**(6)**	**–**	**6**	**–**	**–**
Equity contracts	(7)	**–**	**–**	**(5)**	**–**	**7**	**(5)**	**–**
	(238)	**(43)**	**–**	**–**	**–**	**322**	**41**	**30**
Total	$ 390	**$ (37)**	**$ 13**	**$ 284**	**$ (133)**	**$ 328**	**$ 845**	**$ 44**

(1) The amounts for November 1, 2017 and October 31, 2018 have been prepared in accordance with IFRS 9, prior period amounts have not been restated (refer to Notes 3 and 4).
(2) These amounts represent the gains and losses from fair value changes of Level 3 instruments still held at the end of the period that are recorded in the Consolidated Statement of Income.
(3) Includes amount related to BBVA Chile acquisition of $45 million.
(4) Certain unrealized gains and losses on derivative assets and liabilities are largely offset by mark-to-market changes on other instruments included in trading revenues in the Consolidated Statement of Income, since these instruments act as an economic hedge to certain derivative assets and liabilities.
(5) Certain unrealized losses on interest rate derivative contracts are largely offset by mark-to-market changes on embedded derivatives on certain deposit liabilities in the Consolidated Statement of Income.

The following table summarizes the changes in Level 3 instruments carried at fair value for the year ended October 31, 2017.

	As at October 31, 2017						
($ millions)	Fair value November 1 2016	Gains/(losses) recorded in income[1]	Gains/(losses) recorded in OCI	Purchases/ Issuances	Sales/ Settlements	Transfers into/out of Level 3	Fair value October 31 2017
Trading assets	$ 1,222	$ (20)	$ –	$ –	$ (1,180)	$ –	$ 22
Investment securities[2]	909	(24)	38	122	(332)	(3)	710
Derivative financial instruments	(236)	10	–	(6)	3	(9)	(238)
Deposits[3]	(1,163)	6	–	–	1,157	–	–

(1) Gains or losses for items in Level 3 may be offset with losses or gains on related hedges in Level 1 or Level 2.
(2) Investment securities include financial assets designated as available-for-sale.
(3) These amounts represent embedded derivatives bifurcated from certain deposit liabilities.

Significant transfers

Significant transfers can occur between the fair value hierarchy levels when additional or new information regarding valuation inputs and their refinement and observability become available. The Bank recognizes transfers between levels of the fair value hierarchy as of the end of the reporting period during which the change has occurred.

Derivative liabilities of $316 million were transferred out of Level 3 into Level 2 for the year ended October 31, 2018. All transfers were as a result of new information being obtained regarding the observability of inputs used in the valuation.

The following significant transfers were made among Levels 2 and 3 for the year ended October 31, 2017:

A net amount of derivative assets of $135 million and derivative liabilities of $126 million were transferred out of Level 3 into Level 2 for equity derivatives. Transfers were primarily as a result of assessment and consideration of volatility as an insignificant input for certain equity derivative contracts.

Level 3 sensitivity analysis

The table below sets out information about significant unobservable inputs used in measuring financial instruments categorized as Level 3 in the fair value hierarchy.

	Valuation technique	Significant unobservable inputs	Range of estimates for unobservable inputs[1]	Changes in fair value from reasonably possible alternatives ($ millions)
Derivative financial instruments				
Interest rate contracts	Option pricing model	Interest rate volatility	7% - 93%	–
Equity contracts	Option pricing model	Equity volatility	2% - 124%	
		Single stock correlation	(70)% - 97%	(9)/9

(1) The range of estimates represents the actual lowest and highest level inputs used to fair value financial instruments within each financial statement category.

The Bank applies judgment in determining unobservable inputs used to calculate the fair value of Level 3 instruments.

The following section discusses the significant unobservable inputs for Level 3 instruments.

Correlation

Correlation in a credit derivative or debt instrument refers to the likelihood of a single default causing a succession of defaults. It affects the distribution of the defaults throughout the portfolio and therefore affects the valuation of instruments such as collateralized debt obligation tranches. A higher correlation may increase or decrease fair value depending on the seniority of the instrument.

Correlation becomes an input into equity derivative pricing when the relationship between price movements of two or more of the underlying assets is relevant.

Volatility

Volatility is a measure of security price fluctuation. Historic volatility is often calculated as the annualized standard deviation of daily price variation for a given time period. Implied volatility is volatility, when input into an option pricing model, that returns a value equal to the current market value of the option.

8 Trading Assets

(a) Trading securities

An analysis of the carrying value of trading securities is as follows:

As at October 31, 2018 ($ millions)	Remaining term to maturity						
	Within three months	Three to twelve months	One to five years	Five to ten years	Over ten years	No specific maturity	**Carrying value**
Trading securities:							
Canadian federal government issued or guaranteed debt	**$ 1,500**	**$ 4,040**	**$ 4,781**	**$ 863**	**$ 1,819**	**$ –**	**$ 13,003**
Canadian provincial and municipal debt	**859**	**876**	**2,122**	**3,425**	**2,877**	**–**	**10,159**
U.S. treasury and other U.S. agency debt	**514**	**1,574**	**3,348**	**1,602**	**126**	**–**	**7,164**
Other foreign government debt	**1,353**	**1,042**	**2,452**	**1,155**	**441**	**–**	**6,443**
Common shares	**–**	**–**	**–**	**–**	**–**	**39,700**	**39,700**
Other	**595**	**1,650**	**4,888**	**1,203**	**585**	**84**	**9,005**
Total	**$ 4,821**	**$ 9,182**	**$ 17,591**	**$ 8,248**	**$ 5,848**	**$ 39,784**	**$ 85,474**
Total by currency (in Canadian equivalent):							
Canadian dollar	**$ 2,711**	**$ 5,222**	**$ 5,901**	**$ 4,798**	**$ 4,972**	**$ 9,730**	**$ 33,334**
U.S. dollar	**620**	**2,414**	**7,105**	**2,377**	**523**	**16,695**	**29,734**
Mexican peso	**322**	**119**	**538**	**21**	**4**	**405**	**1,409**
Other currencies	**1,168**	**1,427**	**4,047**	**1,052**	**349**	**12,954**	**20,997**
Total trading securities	**$ 4,821**	**$ 9,182**	**$ 17,591**	**$ 8,248**	**$ 5,848**	**$ 39,784**	**$ 85,474**

As at October 31, 2017 ($ millions)	Remaining term to maturity						
	Within three months	Three to twelve months	One to five years	Five to ten years	Over ten years	No specific maturity	**Carrying value**
Trading securities:							
Canadian federal government issued or guaranteed debt	$ 950	$ 1,696	$ 4,283	$ 1,333	$ 2,081	$ –	$ 10,343
Canadian provincial and municipal debt	1,230	1,127	1,536	1,269	2,163	–	7,325
U.S. treasury and other U.S. agency debt	113	980	3,301	2,214	286	–	6,894
Other foreign government debt	1,172	819	2,716	1,132	990	–	6,829
Common shares	–	–	–	–	–	39,275	39,275
Other	530	1,134	4,702	1,088	532	–	7,986
Total	$ 3,995	$ 5,756	$ 16,538	$ 7,036	$ 6,052	$ 39,275	$ 78,652
Total by currency (in Canadian equivalent):							
Canadian dollar	$ 2,368	$ 3,064	$ 5,130	$ 3,068	$ 4,524	$ 8,619	$ 26,773
U.S. dollar	372	1,771	6,807	2,777	526	12,016	24,269
Mexican peso	249	235	488	1	1	997	1,971
Other currencies	1,006	686	4,113	1,190	1,001	17,643	25,639
Total trading securities	$ 3,995	$ 5,756	$ 16,538	$ 7,036	$ 6,052	$ 39,275	$ 78,652

(b) Trading loans

The following table provides the geographic breakdown of trading loans:

As at October 31 ($ millions)	**2018**	2017
Trading loans[1][2]		
U.S.[3]	**$ 9,080**	$ 10,654
Europe[4]	**3,066**	3,824
Asia Pacific[4]	**1,077**	1,605
Canada[4]	**280**	376
Other[4]	**831**	853
Total	**$ 14,334**	$ 17,312

(1) Geographic segmentation of trading loans is based upon the location of the ultimate risk of the underlying asset.
(2) Loans are denominated in U.S. dollars.
(3) Includes trading loans that serve as a hedge to loan-based credit total return swaps of $6,071 (2017 – $7,390), while the remaining relates to short-term precious metals trading and lending activities.
(4) These loans are primarily related to short-term precious metals trading and lending activities.

9 Financial Instruments Designated at Fair Value Through Profit or Loss

In accordance with its risk management strategy, the Bank has elected to designate certain investments, loans and senior note liabilities at fair value through profit or loss to reduce an accounting mismatch between fair value changes in these instruments and fair value changes in related derivatives, and where a hybrid financial liability contains one or more embedded derivatives that are not closely related to the host contract. Changes in fair value of financial liabilities arising from the Bank's own credit risk are recognized in other comprehensive income, without subsequent reclassification to net income.

The cumulative fair value adjustment due to own credit risk is determined at a point in time by comparing the present value of expected future cash flows over the term of these liabilities discounted at the Bank's effective funding rate, and the present value of expected future cash flows discounted under a benchmark rate. The change in fair value attributable to change in credit risk is determined by the change in the cumulative fair value adjustment due to own credit risk.

The following table presents the fair value of financial assets and liabilities designated at fair value through profit or loss and their changes in fair value.

	Fair value		Change in fair value		Cumulative change in FV[1]	
	As at		For the year ended			
October 31 ($ millions)	**2018**	2017	**2018**	2017	**2018**	2017
Assets						
Investment securities[2]	**$ 12**	$ 13	**$ –**	$ –	**$ –**	$ 11
Loans[3]	**–**	–	**–**	(205)	**–**	(197)
Liabilities						
Senior note liabilities[4]	**8,188**	4,663	**869**	103	**778**	(91)

(1) The cumulative change in fair value is measured from the instruments' date of initial recognition.
(2) Changes in fair value are recorded in non-interest income – other.
(3) Changes in fair value are recorded in non-interest income – trading revenues.
(4) Changes in fair value attributable to changes in the Bank's own credit risk are recorded in other comprehensive income. Other changes in fair value are recorded in non-interest income – trading revenues.

The following tables present the changes in fair value attributable to changes in the Bank's own credit risk for financial liabilities designated at fair value through profit or loss as well as their contractual maturity and carrying amounts.

	Senior Note Liabilities				
	Contractual maturity amount[1]	Carrying Value	Difference between carrying value and contractual maturity amount	Changes in fair value for the period attributable to changes in own credit risk recorded in other comprehensive income	Cumulative changes in fair value attributable to changes in own credit risk[1]
As at October 31, 2018	**$ 8,966**	**$ 8,188**	**$778**	**$(30)**	**$(66)**
As at October 31, 2017	$ 4,572	$ 4,663	$ (91)	$(28)	$(36)

(1) The cumulative change in fair value is measured from the instruments' date of initial recognition.

10 Derivative Financial Instruments

(a) Notional amounts[1]

The following table provides the aggregate notional amounts of derivative financial instruments outstanding by type and segregated between those used by the Bank in its dealer capacity (Trading) and those derivatives designated in hedging relationships. The notional amounts of these contracts represent the derivatives volume outstanding and do not represent the potential gain or loss associated with the market risk or credit risk of such instruments. Credit derivatives within other derivative contracts are comprised primarily of purchased and sold credit default swap transactions. To a lesser extent, this category also includes total return swaps referenced to loans and debt securities. Other derivative contracts – other includes precious metals other than gold, and other commodities including energy and base metal derivatives.

	2018			2017		
As at October 31 ($ millions)	Trading	Hedging	Total	Trading	Hedging	Total
Interest rate contracts						
Exchange-traded:						
Futures	$ 127,595	$ –	$ 127,595	$ 161,590	$ –	$ 161,590
Options purchased	3,402	–	3,402	5,474	–	5,474
Options written	–	–	–	2,894	–	2,894
	130,997	–	130,997	169,958	–	169,958
Over-the-counter:						
Forward rate agreements	11,407	–	11,407	208	–	208
Swaps	403,061	30,480	433,541	441,607	18,609	460,216
Options purchased	29,617	–	29,617	34,190	–	34,190
Options written	34,655	–	34,655	38,099	–	38,099
	478,740	30,480	509,220	514,104	18,609	532,713
Over-the-counter (settled through central counterparties):						
Forward rate agreements	319,026	–	319,026	329,853	–	329,853
Swaps	3,028,670	136,188	3,164,858	2,236,148	106,979	2,343,127
Options purchased	–	–	–	–	–	–
Options written	–	–	–	–	–	–
	3,347,696	136,188	3,483,884	2,566,001	106,979	2,672,980
Total	$ 3,957,433	$ 166,668	$ 4,124,101	$ 3,250,063	$ 125,588	$ 3,375,651
Foreign exchange and gold contracts						
Exchange-traded:						
Futures	$ 7,476	$ –	$ 7,476	$ 32,452	$ –	$ 32,452
Options purchased	48	–	48	16	–	16
Options written	36	–	36	481	–	481
	7,560	–	7,560	32,949	–	32,949
Over-the-counter:						
Spot and forwards	412,229	26,433	438,662	427,112	21,623	448,735
Swaps	340,614	57,380	397,994	321,567	63,300	384,867
Options purchased	42,497	–	42,497	39,100	–	39,100
Options written	41,768	–	41,768	39,547	–	39,547
	837,108	83,813	920,921	827,326	84,923	912,249
Over-the-counter (settled through central counterparties):						
Spot and forwards	27,886	–	27,886	–	–	–
Swaps	–	–	–	–	–	–
Options purchased	–	–	–	–	–	–
Options written	–	–	–	–	–	–
	27,886	–	27,886	–	–	–
Total	$ 872,554	$ 83,813	$ 956,367	$ 860,275	$ 84,923	$ 945,198
Other derivative contracts						
Exchange-traded:						
Equity	$ 43,323	$ –	$ 43,323	$ 33,287	$ –	$ 33,287
Credit	–	–	–	–	–	–
Commodity and other contracts	55,076	–	55,076	45,938	–	45,938
	98,399	–	98,399	79,225	–	79,225
Over-the-counter:						
Equity	79,226	756	79,982	64,444	796	65,240
Credit	18,902	–	18,902	26,737	–	26,737
Commodity and other contracts	45,174	–	45,174	34,715	–	34,715
	143,302	756	144,058	125,896	796	126,692
Over-the-counter (settled through central counterparties):						
Equity	–	–	–	2,863	–	2,863
Credit	10,964	–	10,964	10,855	–	10,855
Commodity and other contracts	326	–	326	6,762	–	6,762
	11,290	–	11,290	20,480	–	20,480
Total	$ 252,991	$ 756	$ 253,747	$ 225,601	$ 796	$ 226,397
Total notional amounts outstanding	$ 5,082,978	$ 251,237	$ 5,334,215	$ 4,335,939	$ 211,307	$ 4,547,246

(1) The notional amounts represent the amount to which a rate or price is applied to determine the amount of cash flows to be exchanged.

(b) Remaining term to maturity

The following table summarizes the remaining term to maturity of the notional amounts of the Bank's derivative financial instruments by type:

As at October 31, 2018 ($ millions)	Within one year	One to five years	Over five years	Total
Interest rate contracts				
Futures	**$ 72,068**	**$ 55,519**	**$ 8**	**$ 127,595**
Forward rate agreements	**227,761**	**92,717**	**9,955**	**330,433**
Swaps	**1,316,741**	**1,448,580**	**833,078**	**3,598,399**
Options purchased	**6,644**	**22,985**	**3,390**	**33,019**
Options written	**4,211**	**24,718**	**5,726**	**34,655**
	1,627,425	**1,644,519**	**852,157**	**4,124,101**
Foreign exchange and gold contracts				
Futures	**3,005**	**4,100**	**371**	**7,476**
Spot and forwards	**438,760**	**26,241**	**1,547**	**466,548**
Swaps	**90,987**	**195,484**	**111,523**	**397,994**
Options purchased	**39,505**	**2,851**	**189**	**42,545**
Options written	**39,395**	**2,199**	**210**	**41,804**
	611,652	**230,875**	**113,840**	**956,367**
Other derivative contracts				
Equity	**84,333**	**34,890**	**4,082**	**123,305**
Credit	**13,056**	**13,798**	**3,012**	**29,866**
Commodity and other contracts	**70,292**	**29,958**	**326**	**100,576**
	167,681	**78,646**	**7,420**	**253,747**
Total	**$ 2,406,758**	**$ 1,954,040**	**$ 973,417**	**$ 5,334,215**

As at October 31, 2017 ($ millions)	Within one year	One to five years	Over five years	Total
Interest rate contracts				
Futures	$ 62,152	$ 98,731	$ 707	$ 161,590
Forward rate agreements	282,062	47,999	–	330,061
Swaps	971,003	1,172,422	659,918	2,803,343
Options purchased	10,690	17,036	11,938	39,664
Options written	5,809	23,800	11,384	40,993
	1,331,716	1,359,988	683,947	3,375,651
Foreign exchange and gold contracts				
Futures	4,810	27,474	168	32,452
Spot and forwards	401,461	47,210	64	448,735
Swaps	96,767	185,747	102,353	384,867
Options purchased	36,291	2,825	–	39,116
Options written	37,309	2,719	–	40,028
	576,638	265,975	102,585	945,198
Other derivative contracts				
Equity	73,983	26,514	893	101,390
Credit	18,249	15,272	4,071	37,592
Commodity and other contracts	50,253	37,021	141	87,415
	142,485	78,807	5,105	226,397
Total	$ 2,050,839	$ 1,704,770	$ 791,637	$ 4,547,246

(c) Credit risk

As with other financial assets, derivative instruments are subject to credit risk. Credit risk arises from the possibility that counterparties may default on their obligations to the Bank. However, whereas the credit risk of other financial assets is represented by the principal amount net of any applicable allowance for credit losses, the credit risk associated with derivatives is normally a small fraction of the notional amount of the derivative instrument.

Derivative contracts generally expose the Bank to credit loss if changes in market rates affect a counterparty's position unfavourably and the counterparty defaults on payment. Accordingly, exposure to credit risk of derivatives is represented by the positive fair value of the instrument.

Negotiated over-the-counter derivatives generally present greater credit exposure than exchange-traded contracts. The net change in the exchange-traded contracts is normally settled daily in cash with the exchange. Holders of these contracts look to the exchange for performance under the contract.

The Bank strives to limit credit risk by dealing with counterparties that it believes are creditworthy, and investment grade counterparties account for a significant portion of the credit risk exposure arising from the Bank's derivative transactions as at October 31, 2018. To control credit risk associated with derivatives, the Bank uses the same credit risk management activities and procedures that are used in the lending business in assessing and adjudicating potential credit exposure. The Bank applies limits to each counterparty, measures exposure as the current positive fair value plus potential future exposure, and uses credit mitigation techniques, such as netting and collateralization.

The Bank obtains the benefit of netting by entering into master netting arrangements with counterparties (typically industry standard International Swaps and Derivatives Association (ISDA) agreements), which allow for a single net settlement of all transactions covered by that agreement in the event of a default or early termination of the transactions. In this manner, the credit risk associated with favourable contracts is eliminated by the master netting arrangement to the extent that unfavourable contracts with the same counterparty are not settled before favourable contracts.

Collateralization is typically documented by way of an ISDA Credit Support Annex (CSA), the terms of which may vary according to each party's view of the other party's creditworthiness. CSAs can require one party to post initial margin at the onset of each transaction. CSAs also allow for variation margin to be called if total uncollateralized mark-to-market exposure exceeds an agreed upon threshold. Such variation margin provisions can be one way (only one party will ever post collateral) or bi-lateral (either party may post collateral depending upon which party is in-the-money). The CSA will also detail the types of collateral that are acceptable to each party, and the adjustments that will be applied against each collateral type. The terms of the ISDA master netting agreements and CSAs are taken into consideration in the calculation of counterparty credit risk exposure (see also page 85 of the 2018 Annual Report).

Derivatives instruments used by the Bank include credit derivatives in its investment and loan portfolios: credit protection is sold as an alternative to acquiring exposure to bond or loan assets, while credit protection is bought to manage or mitigate credit exposures.

The following table summarizes the credit exposure of the Bank's derivative financial instruments. The credit risk amount (CRA) represents the estimated replacement cost, or positive fair value, for all contracts taking into account master netting or collateral arrangements that have been made. The CRA does not reflect actual or expected losses.

The credit equivalent amount (CEA) is the CRA plus an add-on for potential future exposure. The add-on amount is based on a formula prescribed in the Capital Adequacy Requirements (CAR) Guideline of the Superintendent. The risk-weighted balance is calculated by multiplying the CEA by the capital requirement (K) times 12.5, where K is a function of the probability of default (PD), loss given default (LGD), maturity and prescribed correlation factors. Other derivative contracts – other includes precious metals other than gold, and other commodities, including energy and base metal derivatives.

	2018				2017			
As at October 31 ($ millions)	Notional amount	Credit risk amount (CRA)[1]	Credit equivalent amount (CEA)[1]	CET1 Risk Weighted Assets[2]	Notional amount	Credit risk amount (CRA)[1]	Credit equivalent amount (CEA)[1]	CET1 Risk Weighted Assets[2]
Interest rate contracts								
Futures	**$ 127,595**	**$ –**	**$ 93**	**$ –**	$ 161,590	$ –	$ 65	$ –
Forward rate agreements	**330,433**	**36**	**157**	**82**	330,061	20	30	20
Swaps	**3,598,399**	**96**	**4,436**	**1,125**	2,803,343	250	5,459	1,341
Options purchased	**33,019**	**36**	**138**	**63**	39,664	5	105	57
Options written	**34,655**	**–**	**2**	**1**	40,993	–	15	3
	4,124,101	**168**	**4,826**	**1,271**	3,375,651	275	5,674	1,421
Foreign exchange and gold contracts								
Futures	**7,476**	**–**	**85**	**–**	32,452	–	56	–
Spot and forwards	**466,548**	**2,571**	**5,440**	**2,006**	448,735	2,370	6,311	1,765
Swaps	**397,994**	**4,297**	**8,232**	**2,604**	384,867	4,023	7,297	1,898
Options purchased	**42,545**	**712**	**240**	**76**	39,116	523	515	113
Options written	**41,804**	**–**	**20**	**5**	40,028	–	83	12
	956,367	**7,580**	**14,017**	**4,691**	945,198	6,916	14,262	3,788
Other derivative contracts								
Equity	**123,305**	**455**	**4,927**	**1,505**	101,390	45	5,123	1,575
Credit	**29,866**	**239**	**420**	**119**	37,592	12	1,421	174
Commodity and other contracts	**100,576**	**1,182**	**8,052**	**830**	87,415	9	10,953	807
	253,747	**1,876**	**13,399**	**2,454**	226,397	66	17,497	2,556
Credit Valuation Adjustment[2]	**–**	**–**	**–**	**4,616**	–	–	–	2,988
Total derivatives	**$5,334,215**	**$9,624**	**$32,242**	**$13,032**	$ 4,547,246	$ 7,257	$ 37,433	$ 10,753
Amount settled through central counterparties[3]								
Exchange-traded	**236,956**	**–**	**7,300**	**153**	282,132	–	10,385	208
Over-the-counter	**3,523,060**	**–**	**781**	**16**	2,693,460	–	1,334	27
	$3,760,016	**$ –**	**$ 8,081**	**$ 169**	$ 2,975,592	$ –	$ 11,719	$ 235

(1) The amounts presented are net of collateral and master netting agreements at the product level. The total amounts relating to netting and collateral were $27,934 (2017 – $28,107) for CRA, and $63,831 (2017 – $51,623) for CEA.
(2) As per OSFI guideline, effective 2014, Credit Valuation Adjustment (CVA) to CET1 RWA for derivatives was phased-in. In 2018, the CVA was 0.80 (2017 – 0.72).
(3) Amounts are included under total derivatives above. Amounts include exposures settled directly through central counterparties and exposures settled through clearing members of central counterparties.

(d) Fair value

The following table summarizes the fair value of derivatives segregated by type and segregated between trading and those derivatives designated in hedging relationships.

As at October 31 ($ millions)	2018		2018		2017	
	Average fair value		Year-end fair value		Year-end fair value[1]	
	Favourable	Unfavourable	Favourable	Unfavourable	Favourable	Unfavourable
Trading						
Interest rate contracts						
Forward rate agreements	**$ 83**	**$ 17**	**$ 57**	**$ –**	$ 27	$ 1
Swaps	**8,193**	**10,130**	**8,158**	**8,956**	8,895	10,330
Options	**84**	**107**	**104**	**128**	53	75
	8,360	**10,254**	**8,319**	**9,084**	8,975	10,406
Foreign exchange and gold contracts						
Forwards	**5,213**	**5,232**	**6,611**	**5,800**	5,973	5,223
Swaps	**10,660**	**8,570**	**11,864**	**10,292**	10,945	8,774
Options	**765**	**691**	**826**	**831**	730	681
	16,638	**14,493**	**19,301**	**16,923**	17,648	14,678
Other derivative contracts						
Equity	**2,451**	**3,380**	**2,361**	**2,895**	2,274	3,233
Credit	**299**	**128**	**349**	**70**	175	179
Commodity and other contracts	**2,829**	**2,765**	**3,607**	**3,328**	1,576	2,049
	5,579	**6,273**	**6,317**	**6,293**	4,025	5,461
Trading derivatives' market valuation	**$ 30,577**	**$ 31,020**	**$ 33,937**	**$ 32,300**	$ 30,648	$ 30,545
Hedging						
Interest rate contracts						
Swaps			**$ 720**	**$ 2,002**	$ 803	$ 684
Foreign exchange and gold contracts						
Forwards			**331**	**310**	634	215
Swaps			**2,570**	**3,304**	3,218	2,756
			$ 2,901	**$ 3,614**	$ 3,852	$ 2,971
Other derivative contracts						
Equity			**$ –**	**$ 51**	$ 61	$ –
Hedging derivatives' market valuation			**$ 3,621**	**$ 5,667**	$ 4,716	$ 3,655
Total derivative financial instruments as per Statement of Financial Position			**$ 37,558**	**$ 37,967**	$ 35,364	$ 34,200
Less: impact of master netting and collateral[2]			**27,934**	**27,934**	28,107	28,107
Net derivative financial instruments[2]			**$ 9,624**	**$ 10,033**	$ 7,257	$ 6,093

(1) The average fair value of trading derivatives' market valuation for the year ended October 31, 2017 was: favourable $30,780 and unfavourable $34,032. Average fair value amounts are based on the latest 13 month-end balances.

(2) Master netting agreement amounts are based on the capital adequacy criteria of the Basel Committee on Banking Supervision (BCBS) and OSFI. These criteria allow netting where there are legally enforceable contracts which enable net settlement in the event of a default, bankruptcy, liquidation or similar circumstances.

(e) Hedging activities

The Bank manages interest rate risk, foreign currency risk and equity risk through hedge accounting transactions.

Interest rate risk

Single-currency interest rate swaps are used to hedge interest rate risk exposure. In fair value hedges of interest rate risk, the interest rate exposure from fixed rate assets and liabilities is converted from a fixed to floating exposure. In cash flow hedges of interest rate risk, the interest rate exposure from floating rate assets and liabilities is converted from floating to fixed. The Bank generally hedges interest rate risk only to the extent of benchmark interest rates. The total interest cash flows usually comprise a spread in addition to the benchmark rate.

Foreign currency risk

In fair value hedges, cross-currency interest rate swaps and single-currency interest rate swaps are used to manage foreign currency exposure in conjunction with interest rate exposure. Cross-currency interest rate swaps or a combination of cross-currency and single-currency interest rate swaps are mainly used to convert a foreign currency fixed rate exposure to a functional currency floating rate exposure The Bank generally hedges interest rate risk only to the extent of benchmark interest rates. The total interest cash flows usually comprise a spread in addition to the benchmark rate.

In cash flow hedges, cross-currency interest rate swaps, single-currency interest rate swaps, foreign currency forwards and foreign currency assets or liabilities are used to manage foreign currency exposure, or a combined foreign currency and interest rate exposure. Cross-currency interest rate swaps are used to offset the foreign currency exposure by exchanging the interest cash flows in one currency for interest cash flows in another currency. Single-currency interest rate swaps may be used in conjunction with cross-currency interest rate swaps to convert the foreign currency exposure or resulting functional currency exposure from floating to fixed. Foreign currency forwards and foreign currency denominated assets and liabilities are used to offset the exposure arising from highly probable future cash flows and purchase considerations for business acquisitions denominated in a foreign currency. In hedges of both foreign currency and interest rate exposure, the interest rate risk is generally hedged only to the extent of the benchmark interest rate. The total interest cash flows usually comprise a spread in addition to the benchmark rate.

In net investment hedges, the Bank designates foreign currency liabilities and foreign currency forwards as hedging instruments to manage foreign currency exposure. The designated non-derivative liabilities are denominated in the functional currency of the net investment, such that the foreign

exchange translation impact from the net investment will be offset by the foreign exchange impact from the designated liabilities. The foreign currency forward contracts are structured to sell the functional currency of the net investment in return for the Bank's functional currency.

Equity risk

Equity risk is created by the Bank's share-based compensation plans awarded to employees. In cash flow hedges, total return swaps are mainly used to offset the equity exposure by exchanging interest payments for payments based on the returns on the underlying shares.

For all of the risks identified above, the economic relationship and hedge ratio are determined using a qualitative and quantitative assessment. This assessment incorporates comparison of critical terms of the hedged and hedging item, and regression analysis. For regression analysis, a hedging relationship is considered highly effective when all of the following criteria are met: correlation between the variables in the regression is at least 0.8 or greater; slope of the regression is within a 0.8-1.25 range; and confidence level of the slope is at least 95%.The main sources of hedge ineffectiveness include the following:

- The use of different discount curves to value the hedged item and the hedging derivative in fair value hedges, in order to reflect the reduced credit risk of collateralized derivatives;
- Differences in the underlying reference interest rate tenor and reset/settlement frequency between the hedging instruments and the hedged item.

The Bank has elected to continue to apply the hedge accounting requirements of IAS 39. However, the Bank has implemented the additional hedge accounting disclosures that are required by the IFRS 9 related amendments to IFRS 7 "Financial Instruments: Disclosures". The following tables present current fiscal year information in accordance with these new disclosure requirements. Prior year comparatives have not been restated and are presented in accordance with the prior IFRS 7 disclosure requirements at the end of this section.

The following table summarizes the notional amounts of derivatives and carrying amounts of cash and deposit liabilities designated as hedging instruments.

	Notional amounts[1]				
	Remaining term to maturity			No specific	
As at October 31, 2018 ($ millions)	Within one year	One to five years	Over five years	maturity	Total
Fair value hedges					
Interest rate risk – swaps	**$ 16,006**	**$ 78,236**	**$ 11,270**	**$ –**	**$ 105,512**
Foreign currency/interest rate risk – swaps	**–**	**689**	**–**	**–**	**689**
Cash flow hedges					
Interest rate risk – swaps	**12,257**	**21,908**	**9,713**	**–**	**43,878**
Foreign currency/interest rate risk – swaps	**5,539**	**19,193**	**2,489**	**–**	**27,221**
Foreign currency risk					
Swaps	**20,983**	**63,697**	**8,465**	**–**	**93,145**
Foreign currency forwards	**8,999**	**–**	**–**	**–**	**8,999**
Cash	**–**	**–**	**–**	**92**	**92**
Equity risk – total return swaps	**298**	**458**	**–**	**–**	**756**
Net investment hedges					
Foreign currency risk					
Foreign currency forwards	**17,434**	**–**	**–**	**–**	**17,434**
Deposit liabilities – carrying amount	**–**	**–**	**–**	**6,077**	**6,077**
Total	**$ 81,516**	**$ 184,181**	**$ 31,937**	**$ 6,169**	**$ 303,803**

(1) Notional amounts relating to derivatives that are hedging multiple risks in both assets and liabilities are included in more than one category.

The following table shows the average rate or price of significant hedging instruments.

As at October 31, 2018	Average rate or price(1)		
	Fixed interest rate	FX rate	Price
Fair value hedges			
Interest rate risk – swaps	**2.04%**	**n/a**	**n/a**
Foreign currency/interest rate risk – swaps			
CAD-USD	**2.22%**	**1.29**	**n/a**
CAD-EUR	**3.02%**	**1.33**	**n/a**
Cash flow hedges			
Interest rate risk – swaps	**2.37%**	**n/a**	**n/a**
Foreign currency/ interest rate risk – swaps			
CAD-USD	**1.75%**	**1.27**	**n/a**
Foreign currency risk			
Swaps			
CAD-USD	**n/a**	**1.30**	**n/a**
CAD-EUR	**n/a**	**1.48**	**n/a**
CAD-GBP	**n/a**	**1.74**	**n/a**
Foreign currency forwards			
CAD-USD	**n/a**	**1.30**	**n/a**
Equity price risk – total return swaps	**n/a**	**n/a**	**$ 73.87**
Net investment hedges			
Foreign currency risk – foreign currency forwards			
CAD-USD	**n/a**	**1.29**	**n/a**
CAD-MXN	**n/a**	**15.77**	**n/a**
CAD-PEN	**n/a**	**2.59**	**n/a**

(1) The average rate or price is calculated in aggregate for all of the Bank's hedge relationships, including hedges of assets and liabilities. The majority of the Bank's hedges have a remaining term of maturity of less than 5 years.

For fair value hedges, the following table contains information related to items designated as hedging instruments, hedged items and ineffectiveness.

For the year ended October 31, 2018 ($ millions)	Carrying amount of the hedging instruments(1)		Hedge Ineffectiveness(2)				Accumulated amount of fair value hedge adjustment gains/(losses) on the hedged item(4)	
	Assets	Liabilities	Gains/(losses) on hedging instrument used to calculate hedge ineffectiveness	Gains/(losses) on hedged item used to calculate hedge ineffectiveness	Ineffectiveness recorded in non-interest income – other	Carrying amount of the hedged item(3)	Active hedges	Discontinued hedges
Fair value hedges								
Interest rate risk – swaps	**$ 448**	**$ (1,454)**	**$ (475)**	**$ 469**	**$ (6)**			
Investment securities			**360**	**(367)**	**(7)**	**$ 16,286**	**$ (149)**	**$ 63**
Loans			**260**	**(265)**	**(5)**	**23,763**	**(246)**	**(149)**
Deposit liabilities			**(1,037)**	**1,043**	**6**	**(58,026)**	**1,065**	**186**
Subordinated debentures			**(58)**	**58**	**–**	**(3,923)**	**37**	**40**
Foreign currency/interest rate risk – swaps	**7**	**(31)**	**–**	**(1)**	**(1)**			
Investment securities			**5**	**(5)**	**–**	**814**	**6**	**–**
Deposit liabilities			**(4)**	**4**	**–**	**(466)**	**3**	**–**
Subordinated debentures			**(1)**	**–**	**(1)**	**–**	**–**	**–**
Total	**$ 455**	**$ (1,485)**	**$ (475)**	**$ 468**	**$ (7)**	**$ (21,552)**	**$ 716**	**$ 140**

(1) Comprises unrealized gains/losses and are recorded within derivative financial instruments in assets and liabilities, respectively in the Consolidated Statement of Financial Position.
(2) Includes ineffectiveness related to hedges discontinued during the year ended October 31, 2018.
(3) This represents the carrying value on the Consolidated Statement of Financial Position and comprises amortized cost before allowance for credit losses, plus fair value hedge adjustment, except for investment securities which are carried at fair value.
(4) This represents the accumulated fair value hedge adjustment and is a component of the carrying amount of the hedged item.

For cash flow hedges and net investment hedges, the following table contains information related to items designated as hedging instruments, hedged items and ineffectiveness.

For the year ended October 31, 2018 ($ millions)	Carrying amount of the hedging instruments[1] Assets	Liabilities	Hedge Ineffectiveness[2] Gains/(losses) on hedging instrument used to calculate hedge ineffectiveness	Gains/(losses) on hypothetical derivative used to calculate hedge ineffectiveness[3]	Ineffectiveness recorded in non-interest income – other[4]
Cash flow hedges					
Interest rate risk – swaps	$ 961	$ (1,350)	$ (339)	$ (341)	$ 2
Foreign currency/interest rate risk – swaps	101	(955)	(530)	(549)	(6)
Foreign currency risk					
Swaps	1,773	(1,516)	(563)	(562)	(6)
Foreign currency forwards	143	(14)	332	332	–
Cash	92	–	1	1	–
Equity risk – total return swaps	–	(51)	(92)	(92)	–
	3,070	(3,886)	(1,191)	(1,211)	(10)
Net investment hedges					
Foreign currency risk					
Foreign currency forwards	188	(296)	(160)	(160)	–
Deposit liabilities	–	(6,077)	(121)	(121)	–
	188	(6,373)	(281)	(281)	–
Total	$ 3,258	$ (10,259)	$ (1,472)	$ (1,492)	$ (10)

(1) Comprises unrealized gains/losses for derivative instruments and are recorded within derivative financial instruments in assets and liabilities, respectively in the Consolidated Statement of Financial Position.
(2) Includes ineffectiveness related to hedges discontinued during the year ended October 31, 2018.
(3) For cash flow hedges, hypothetical derivatives having critical terms which match those of the underlying hedged item are used to assess hedge ineffectiveness.
(4) For cash flow hedges, ineffectiveness is only recognized in the Consolidated Statement of Income when the life-to-date cumulative change in the hedging instrument exceeds the cumulative change in the hypothetical derivative.

For cash flow hedges and net investment hedges, the following table contains information regarding the impacts on the Consolidated Statement of Other Comprehensive Income on a pre-tax basis.

For the year ended October 31, 2018 ($ millions)	AOCI as at November 1, 2017	Net gains/ (losses) recognized in OCI	Amount reclassified to net income as the hedged item affects net income[1]	Amount reclassified to net income for hedges of forecasted transactions that are no longer expected to occur[1]	Net gains (losses) included in non-financial asset/liability as a result of a hedged forecasted transaction	AOCI as at October 31, 2018	Balance in cash flow hedge reserve/unrealized foreign currency translation account as at October 31, 2018 Active hedges	Discontinued hedges
Cash flow hedges								
Interest rate risk	$ 104	$ (341)	$ 83	$ –	$ –	$ (154)	$ (262)	$ 108
Foreign currency/interest rate risk	(151)	(524)	225	–	–	(450)	(352)	(98)
Foreign currency risk	321	(224)	464	(22)	(94)	445	433	12
Equity risk	46	(92)	39	–	–	(7)	(7)	–
	320	(1,181)	811	(22)	(94)	(166)	(188)	22
Net investment hedges								
Foreign currency risk	(2,970)	(281)	–	–	–	(3,251)	(3,199)	(52)
Total	$ (2,650)	$(1,462)	$ 811	$ (22)	$ (94)	$ (3,417)	$ (3,387)	$ (30)

(1) Amounts reclassified from the cash flow hedge reserve to net income are recorded in non-interest income-other.

Comparative year information under prior IFRS 7 disclosure requirements

Ineffectiveness of hedge relationships

Due to the ineffective portion of designated hedges, the Bank recorded the following amounts in non-interest income – other:

For the year ended October 31 ($ millions)	2017
Fair value hedges	
Gain (loss) recorded on hedged items	$ 574
Gain (loss) recorded on hedging instruments	(588)
Ineffectiveness	$ (14)
Cash flow hedges	
Ineffectiveness	$ 24

Hedging instruments

Market valuation is disclosed by the type of relationship:

As at October 31 ($ millions)	2017 Favourable	2017 Unfavourable
Derivatives designated in fair value hedging relationships[1]	$ 687	$ 751
Derivatives designated in cash flow hedging relationships	3,746	2,749
Derivatives designated in net investment hedging relationships[1]	283	155
Total derivatives designated in hedging relationships	$ 4,716	$ 3,655

(1) As at October 31, 2017, the fair value of non-derivative instruments designated as net investment hedges and fair value hedges was $6,183 (2016 – $6,905). These non-derivative hedging instruments are presented as deposits – financial institutions on the Consolidated Statement of Financial Position.

Cash flow hedges

The period when cash flows of designated hedged items are expected to occur and impact the Consolidated Statement of Income are as follows:

As at October 31, 2017 ($ millions)	Within one year	Within one to five years	More than five years
Cash inflows from assets	$ 11,235	$ 19,866	$ 4,178
Cash outflows from liabilities	(31,542)	(26,863)	(4,746)
Net cash flows	$ (20,307)	$ (6,997)	$ (568)

Income related to interest cash flows is recognized using the effective interest method over the life of the underlying instrument. Foreign currency gains and losses related to future cash flows of on-balance sheet monetary items are recognized as incurred. Forecasted revenue is recognized over the period to which it relates.

11 Offsetting Financial Assets and Financial Liabilities

The Bank is eligible to present certain financial assets and financial liabilities as listed in the table below on a net basis on the Consolidated Statement of Financial Position pursuant to criteria described in Note 3 – Significant accounting policies.

The following tables provide information on the impact of offsetting on the Bank's Consolidated Statement of Financial Position, as well as the financial impact of netting for instruments that are subject to enforceable master netting arrangements or similar agreements, but do not qualify for offsetting in the Consolidated Statement of Financial Position, as well as available cash and financial instrument collateral.

As at October 31, 2018 ($ millions)

Types of financial assets	Gross amounts of recognized financial assets	Gross amounts of recognized financial liabilities offset in the consolidated statement of financial position	Net amounts of financial assets presented in the consolidated statement of financial position	Related amounts not offset in the consolidated statement of financial position: Impact of master netting arrangements or similar agreements[1]	Collateral[2]	Net amount[3]
Derivative financial instruments	**$ 37,887[4]**	**$ (329)[4]**	**$ 37,558**	**$(24,568)**	**$ (4,085)**	**$ 8,905**
Securities purchased under resale agreements and securities borrowed	**116,375**	**(12,357)**	**104,018**	**(6,849)**	**(91,347)**	**5,822**
Total	**$154,262**	**$(12,686)**	**$141,576**	**$(31,417)**	**$(95,432)**	**$14,727**

As at October 31, 2018 ($ millions)

Types of financial liabilities	Gross amounts of recognized financial liabilities	Gross amounts of recognized financial assets offset in the consolidated statement of financial position	Net amounts of financial liabilities presented in the consolidated statement of financial position	Related amounts not offset in the consolidated statement of financial position: Impact of master netting arrangements or similar agreements[1]	Collateral[2]	Net amount
Derivative financial instruments	**$ 38,296[4]**	**$ (329)[4]**	**$ 37,967**	**$(24,568)**	**$ (5,051)**	**$ 8,348**
Obligations related to securities sold under repurchase agreements and securities lent	**113,614**	**(12,357)**	**101,257**	**(6,849)**	**(88,154)**	**6,254**
Total	**$151,910**	**$(12,686)**	**$139,224**	**$(31,417)**	**$(93,205)**	**$14,602**

(1) Amounts that are subject to master netting arrangements or similar agreements but were not offset in the Consolidated Statement of Financial Position because they did not meet the net settlement/simultaneous settlement criteria; or because the rights of set off are conditional upon the default of the counterparty only.
(2) Cash and financial instrument collateral amounts received or pledged in relation to the total amounts of financial assets and financial liabilities, including those that were not offset in the Consolidated Statement of Financial Position. These amounts are disclosed at fair value and the rights of set off are conditional upon the default of the counterparty.
(3) Not intended to represent the Bank's actual exposure to credit risk, as a variety of credit mitigation strategies are employed in addition to offsetting and collateral arrangements.
(4) During 2018, the Bank adopted the settlement-to-market (STM) model for derivatives cleared through a clearing organization. Under this model, the legal characterization of variation margin is considered to be settled at the end of each day. As such, the balances in the Gross amounts of recognized financial assets/liabilities and the Gross amounts offset in the consolidated statement of financial position decreased by approximately $18 billion each.

As at October 31, 2017 ($ millions)				Related amounts not offset in the consolidated statement of financial position		
Types of financial assets	Gross amounts of recognized financial assets	Gross amounts of recognized financial liabilities offset in the consolidated statement of financial position	Net amounts of financial assets presented in the consolidated statement of financial position	Impact of master netting arrangements or similar agreements[1]	Collateral[2]	Net amount[3]
Derivative financial instruments[4]	$ 49,512	$ (14,148)	$ 35,364	$ (22,400)	$ (5,915)	$ 7,049
Securities purchased under resale agreements and securities borrowed	106,721	(11,402)	95,319	(11,649)	(75,675)	7,995
Total	$ 156,233	$ (25,550)	$ 130,683	$ (34,049)	$ (81,590)	$ 15,044

As at October 31, 2017 ($ millions)				Related amounts not offset in the consolidated statement of financial position		
Types of financial liabilities	Gross amounts of recognized financial liabilities	Gross amounts of recognized financial assets offset in the consolidated statement of financial position	Net amounts of financial liabilities presented in the consolidated statement of financial position	Impact of master netting arrangements or similar agreements[1]	Collateral[2]	Net amount
Derivative financial instruments[4]	$ 48,348	$ (14,148)	$ 34,200	$ (22,400)	$ (4,700)	$ 7,100
Obligations related to securities sold under repurchase agreements and securities lent	107,245	(11,402)	95,843	(11,649)	(72,311)	11,883
Total	$ 155,593	$ (25,550)	$ 130,043	$ (34,049)	$ (77,011)	$ 18,983

(1) Amounts that are subject to master netting arrangements or similar agreements but were not offset in the Consolidated Statement of Financial Position because they did not meet the net settlement/simultaneous settlement criteria; or because the rights of set off are conditional upon the default of the counterparty only.
(2) Cash and financial instrument collateral amounts received or pledged in relation to the total amounts of financial assets and financial liabilities, including those that were not offset in the Consolidated Statement of Financial Position. These amounts are disclosed at fair value and the rights of set off are conditional upon the default of the counterparty.
(3) Not intended to represent the Bank's actual exposure to credit risk, as a variety of credit mitigation strategies are employed in addition to offsetting and collateral arrangements.
(4) For fiscal 2017, the cash collateral received against the positive market values of derivative financial instruments of $793 and the cash collateral pledged towards the negative mark to market of derivative financial instruments of $1,112 are recorded within other liabilities and other assets, respectively.

12 Investment Securities

The following table presents the carrying amounts of the Bank's investment securities per measurement category.

As at October 31, 2018 ($ millions)	2018[1]	2017
Debt investment securities measured at FVOCI	**$ 55,843**	$ n/a
Debt investment securities measured at amortized cost	**20,743**	n/a
Equity investment securities designated as at FVOCI	**1,305**	n/a
Equity investment securities measured at FVTPL	**505**	n/a
Available-for-sale investment securities	**n/a**	50,504
Held-to-maturity investment securities	**n/a**	18,765
Total investment securities	**78,396**	69,269

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

(a) Debt investment securities measured at fair value through other comprehensive income (FVOCI)

As at October 31, 2018 ($ millions)	Cost	Gross unrealized gains	Gross unrealized losses	Fair value
Canadian federal government issued or guaranteed debt	**$ 8,903**	**$ 38**	**$ 50**	**$ 8,891**
Canadian provincial and municipal debt	**4,403**	**3**	**54**	**4,352**
U.S. treasury and other U.S. agency debt	**19,298**	**6**	**163**	**19,141**
Other foreign government debt	**20,022**	**49**	**81**	**19,990**
Other debt	**3,503**	**6**	**40**	**3,469**
Total debt securities measured at FVOCI	**$ 56,129**	**$ 102**	**$ 388**	**$ 55,843**

(b) Debt investment securities measured at amortized cost

As at October 31, 2018 ($ millions)	Fair Value	Carrying value[(1)]
Canadian federal and provincial government issued or guaranteed debt	**$ 6,530**	**$ 6,681**
U.S. treasury and other U.S. agency debt	**4,321**	**4,462**
Other foreign government debt	**3,086**	**3,131**
Corporate debt	**6,379**	**6,469**
Total debt investment securities measured at amortized cost	**$ 20,316**	**$ 20,743**

(1) Balances are net of impairment allowances of $(1).

(c) Equity investment securities designated at fair value through other comprehensive income (FVOCI)

The Bank has designated certain instruments shown in the following table as equity securities FVOCI as these investments are expected to be held for the long-term for strategic purposes, effective November 1, 2017. In prior years, these instruments were classified as available-for-sale and measured at fair value with changes to carrying value recognized in other comprehensive income.

As at October 31, 2018 ($ millions)	Cost	Gross unrealized gains	Gross unrealized losses	Fair value
Preferred equity instruments	**$ 334**	**$ –**	**$ 54**	**$ 280**
Common shares	**937**	**126**	**38**	**1,025**
Total equity investment securities designated at FVOCI	**$ 1,271**	**$ 126**	**$ 92**	**$ 1,305**

(d) Available-for-sale investment securities

An analysis of unrealized gains and losses on available-for-sale securities is as follows:

As at October 31, 2017 ($ millions)	Cost	Gross unrealized gains	Gross unrealized losses	Fair value
Canadian federal government issued or guaranteed debt	$ 12,069	$ 119	$ 95	$ 12,093
Canadian provincial and municipal debt	4,839	13	29	4,823
U.S. treasury and other U.S. agency debt	6,761	1	90	6,672
Other foreign government debt	19,788	49	34	19,803
Other debt	5,792	34	24	5,802
Preferred shares	397	1	87	311
Common shares	899	164	63	1,000
Total available-for-sale securities	$ 50,545	$ 381	$ 422	$ 50,504

The net unrealized loss on available-for-sale securities of $41 million increases to a net unrealized loss of $48 million after the impact of qualifying hedges is taken into account. The net unrealized loss on available-for-sale securities is recorded in Accumulated Other Comprehensive Income.

(e) Held-to-maturity investment securities

An analysis of the fair value and carrying value of held-to-maturity securities is presented below:

As at October 31, 2017 ($ millions)	Fair value	Carrying value
Canadian federal and provincial government issued or guaranteed debt	$ 5,748	$ 5,779
U.S. treasury and other U.S. agency debt	3,991	3,993
Other foreign government debt	2,690	2,705
Corporate debt	6,287	6,288
Total held-to-maturity securities	$ 18,716	$ 18,765

(f) An analysis of the carrying value of investment securities is as follows:

	Remaining term to maturity						
As at October 31, 2018 ($ millions)	Within three months	Three to twelve months	One to five years	Five to ten years	Over ten years	No specific maturity	Carrying value
Fair value through other comprehensive income							
Debt instruments							
Canadian federal government issued or guaranteed debt	$ 1,439	$ 407	$ 5,878	$ 105	$ 1,062	$ –	$ 8,891
Yield[(1)] %	*0.6*	*1.5*	*2.0*	*2.6*	*3.5*	–	*1.9*
Canadian provincial and municipal debt	1,092	1,107	2,084	64	5	–	4,352
Yield[(1)] %	*1.7*	*1.8*	*1.8*	*3.2*	*2.9*	–	*1.8*
U.S. treasury and other U.S. agency debt	322	3,517	13,485	1,654	163	–	19,141
Yield[(1)] %	*1.8*	*2.0*	*2.4*	*3.1*	*3.2*	–	*2.4*
Other foreign government debt	6,884	6,379	5,349	1,053	325	–	19,990
Yield[(1)] %	*1.3*	*1.7*	*3.7*	*3.8*	*4.3*	–	*2.3*
Other debt	718	872	1,553	141	185	–	3,469
Yield[(1)] %	*1.5*	*1.8*	*2.0*	*2.6*	*2.6*	–	*1.9*
	10,455	12,282	28,349	3,017	1,740	–	55,843
Equity instruments							
Preferred equity instruments	–	–	–	–	–	280	280
Common shares	–	–	–	–	–	1,025	1,025
						1,305	1,305
Total FVOCI	10,455	12,282	28,349	3,017	1,740	1,305	57,148
Amortized cost							
Canadian federal and provincial government issued or guaranteed debt	692	868	5,121	–	–	–	6,681
U.S. treasury and other U.S. agency debt	197	988	3,266	–	11	–	4,462
Other foreign government debt	354	1,193	966	502	116	–	3,131
Corporate debt	637	1,113	4,414	246	59	–	6,469
	1,880	4,162	13,767	748	186	–	20,743
Fair value through profit or loss							
Equity instruments	–	–	–	–	–	505	505
Total investment securities	$ 12,335	$ 16,444	$ 42,116	$ 3,765	$ 1,926	$ 1,810	$ 78,396
Total by currency (in Canadian equivalent):							
Canadian dollar	$ 2,918	$ 1,828	$ 11,478	$ 357	$ 1,102	$ 967	$ 18,650
U.S. dollar	1,797	8,384	26,137	2,053	354	366	39,091
Mexican peso	640	541	892	282	–	15	2,370
Other currencies	6,980	5,691	3,609	1,073	470	462	18,285
Total investment securities	$ 12,335	$ 16,444	$ 42,116	$ 3,765	$ 1,926	$ 1,810	$ 78,396

(1) Represents the weighted-average yield of fixed income securities.

As at October 31, 2017 ($ millions)	Remaining term to maturity: Within three months	Three to twelve months	One to five years	Five to ten years	Over ten years	No specific maturity	Carrying value
Available-for-sale							
Canadian federal government issued or guaranteed debt	$ 8	$ 291	$ 9,780	$ 905	$ 1,109	$ –	$ 12,093
Yield[(1)] %	*0.9*	*1.1*	*1.1*	*2.7*	*3.2*	–	*1.4*
Canadian provincial and municipal debt	99	737	3,698	284	5	–	4,823
Yield[(1)] %	*0.6*	*1.5*	*1.7*	*2.4*	*2.9*	–	*1.7*
U.S. treasury and other U.S. agency debt	106	1,260	2,374	2,704	228	–	6,672
Yield[(1)] %	*1.0*	*1.5*	*1.0*	*1.6*	*1.5*	–	*1.3*
Other foreign government debt	7,810	5,283	5,313	1,259	138	–	19,803
Yield[(1)] %	*0.6*	*2.8*	*4.1*	*5.7*	*6.2*	–	*2.5*
Other debt	1,082	1,541	2,784	210	185	–	5,802
Yield[(1)] %	*0.6*	*0.8*	*1.6*	*2.5*	*2.5*	–	*1.2*
Preferred shares	–	–	–	–	–	311	311
Common shares	–	–	–	–	–	1,000	1,000
Total available-for-sale securities	9,105	9,112	23,949	5,362	1,665	1,311	50,504
Held-to-maturity							
Canadian federal and provincial government issued or guaranteed debt	65	860	4,854	–	–	–	5,779
U.S. treasury and other U.S. agency debt	1,290	–	2,703	–	–	–	3,993
Other foreign government debt	–	683	1,914	102	6	–	2,705
Corporate debt	167	821	5,300	–	–	–	6,288
Total held-to-maturity assets	1,522	2,364	14,771	102	6	–	18,765
Total investment securities	$ 10,627	$ 11,476	$ 38,720	$ 5,464	$ 1,671	$ 1,311	$ 69,269
Total by currency (in Canadian equivalent):							
Canadian dollar	$ 76	$ 1,165	$ 15,500	$ 1,276	$ 1,130	$ 539	$ 19,686
U.S. dollar	1,961	4,178	19,344	3,023	419	372	29,297
Mexican peso	420	579	1,568	285	–	9	2,861
Other currencies	8,170	5,554	2,308	880	122	391	17,425
Total investment securities	$ 10,627	$ 11,476	$ 38,720	$ 5,464	$ 1,671	$ 1,311	$ 69,269

(1) Represents the weighted-average yield of fixed income securities.

(g) Net gain on sale of investment securities

The following table presents the net gain on sale of investment securities:

For the year ended October 31 ($ millions)	2018[(1)]	2017	2016
Net realized gains	**$ n/a**	$ 399	$ 570
Debt investment securities measured at fair value through other comprehensive income (FVOCI)	**146**	n/a	n/a
Total net realized gains on investment securities	**146**	399	570
Impairment losses	**–**	19[(2)]	36[(2)]
Net gain on sale of investment securities	**$ 146**	$ 380	$ 534

(1) The amounts for year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Notes 3 and 4).
(2) Impairment losses are comprised of (2017 – $14; 2016 – $36) from equity securities and (2017 –$5; 2016 – nil) from other debt securities.

13 Loans, Impaired Loans and Allowance for Credit Losses

(a) Loans at amortized cost

	IFRS 9			IAS 39		
	2018[(1)]			2017		
As at October 31 ($ millions)	Gross loans	Allowance for credit losses	Net carrying amount	Gross loans	Allowance for credit losses	Net carrying amount
Residential mortgages	**$ 253,357**	**$ 678**	**$ 252,679**	$ 236,916	$ 551	$ 236,365
Personal loans	**96,019**	**2,109**	**93,910**	89,227	1,502	87,725
Credit cards	**16,485**	**1,213**	**15,272**	14,104	802	13,302
Business and government	**191,038**	**1,065**	**189,973**	168,449	1,472	166,977
Total	**$ 556,899**	**$ 5,065**	**$ 551,834**	$ 508,696	$ 4,327	$ 504,369

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

(b) Loans and acceptances outstanding by geography[1]

As at October 31 ($ millions)	2018	2017
Canada:		
Residential mortgages	**$ 213,083**	$ 205,793
Personal loans	**72,935**	64,295
Credit cards	**7,361**	13,495
Business and government	**57,918**	52,935
	351,297	336,518
United States:		
Personal loans	**1,193**	1,228
Business and government	**40,613**	35,702
	41,806	36,930
Mexico:		
Residential mortgages	**7,651**	6,911
Personal loans	**3,298**	3,064
Credit cards	**674**	520
Business and government	**15,399**	13,635
	27,022	24,130
Chile:		
Residential mortgages	**15,313**	7,302
Personal loans	**6,023**	3,587
Credit cards	**2,592**	1,744
Business and government	**19,876**	10,109
	43,804	22,742
Peru:		
Residential mortgages	**2,947**	2,735
Personal loans	**3,888**	3,682
Credit cards	**1,575**	1,410
Business and government	**11,707**	10,617
	20,117	18,444
Colombia:		
Residential mortgages	**2,189**	1,999
Personal loans	**3,138**	1,845
Credit cards	**2,255**	1,746
Business and government	**3,996**	3,838
	11,578	9,428
Other International:		
Residential mortgages	**12,174**	12,176
Personal loans	**5,544**	4,471
Credit cards	**2,028**	2,244
Business and government	**41,529**	41,613
	61,275	60,504
Total loans	**556,899**	508,696
Acceptances[2]	**16,329**	13,560
Total loans and acceptances[3]	**573,228**	522,256
Allowance for credit losses[4]	**(5,073)**	(4,327)
Total loans and acceptances net of allowances for loan losses	**$ 568,155**	$ 517,929

(1) Geographic segmentation is based on the location of the property for residential mortgages; otherwise, the residence of the borrower.
(2) 1.6% of borrowers reside outside Canada.
(3) Loans and acceptances denominated in US dollars were $107,944 (2017 – $100,452), in Chilean pesos $37,515 (2017 – $17,824), Mexican pesos $21,561 (2017 – $18,857), and in other foreign currencies $49,223 (2017 – $44,176).
(4) Allowance for credit losses for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior year amount have not been restated (refer to Notes 2, 3, 4).

(c) Loan maturities

As at October 31, 2018	Remaining term to maturity						Rate sensitivity			
($ millions)	Within one year	One to five years	Five to ten years	Over ten years	No specific maturity	Total	Floating	Fixed rate	Non-rate sensitive	Total
Residential mortgages	**$ 49,762**	**$ 180,563**	**$ 10,326**	**$ 11,040**	**$ 1,666**	**$ 253,357**	**$ 59,351**	**$ 191,802**	**$ 2,204**	**$ 253,357**
Personal loans	**17,422**	**35,050**	**4,775**	**693**	**38,079**	**96,019**	**37,003**	**58,007**	**1,009**	**96,019**
Credit cards	**–**	**–**	**–**	**–**	**16,485**	**16,485**	**5,334**	**11,151**	**–**	**16,485**
Business and government	**85,090**	**91,595**	**7,378**	**773**	**6,202**	**191,038**	**138,510**	**50,606**	**1,922**	**191,038**
Total	**$ 152,274**	**$ 307,208**	**$ 22,479**	**$ 12,506**	**$ 62,432**	**$ 556,899**	**$ 240,198**	**$ 311,566**	**$ 5,135**	**$ 556,899**
Allowance for credit losses	**–**	**–**	**–**	**–**	**(5,065)**	**(5,065)**	**–**	**–**	**(5,065)**	**(5,065)**
Total loans net of allowance for credit losses	**$ 152,274**	**$ 307,208**	**$ 22,479**	**$ 12,506**	**$ 57,367**	**$ 551,834**	**$ 240,198**	**$ 311,566**	**$ 70**	**$ 551,834**

As at October 31, 2017	Remaining term to maturity						Rate sensitivity			
($ millions)	Within one year	One to five years	Five to ten years	Over ten years	No specific maturity	Total	Floating	Fixed rate	Non-rate sensitive	Total
Residential mortgages	$ 45,462	$ 171,908	$ 9,098	$ 8,919	$ 1,529	$ 236,916	$ 56,862	$ 178,044	$ 2,010	$ 236,916
Personal loans	15,952	31,500	4,478	815	36,482	89,227	39,004	49,137	1,086	89,227
Credit cards	–	–	–	–	14,104	14,104	4,733	9,371	–	14,104
Business and government	77,724	80,124	4,597	760	5,244	168,449	119,515	47,162	1,772	168,449
Total loans	$ 139,138	$ 283,532	$ 18,173	$ 10,494	$ 57,359	$ 508,696	$ 220,114	$ 283,714	$ 4,868	$ 508,696
Allowance for credit losses	–	–	–	–	(4,327)	(4,327)	–	–	(4,327)	(4,327)
Total loans net of allowance for credit losses	$ 139,138	$ 283,532	$ 18,173	$ 10,494	$ 53,032	$ 504,369	$ 220,114	$ 283,714	$ 541	$ 504,369

(d) Impaired loans[(1)(2)]

	IFRS 9			IAS 39		
	2018[(4)]			2017[(3)]		
As at October 31 ($ millions)	Gross impaired loans[(1)]	Allowance for credit losses	Net	Gross impaired loans[(1)]	Allowance for credit losses	Net
Residential mortgages	**$1,797**	**$ 360[(5)]**	**$1,437**	$ 1,445	$ 326[(5)]	$ 1,119
Personal loans	**1,069**	**644[(5)]**	**425**	1,067	1,040[(5)]	27
Credit cards	**–**	**–[(5)]**	**–**	543	543[(5)]	–
Business and government	**2,264**	**673[(6)]**	**1,591**	1,810	713[(6)]	1,097
Total	**$5,130**	**$1,677**	**$3,453**	$ 4,865	$ 2,622[(7)]	$ 2,243
By geography:						
Canada	**$ 999**	**381**	**618**	$ 1,049		
United States	**80**	**25**	**55**	140		
Mexico	**359**	**164**	**195**	303		
Peru	**581**	**317**	**264**	704		
Chile	**753**	**158**	**595**	565		
Colombia	**619**	**159**	**460**	462		
Other International	**1,739**	**473**	**1,266**	1,642		
Total	**$5,130**	**1,677**	**3,453**	$ 4,865		

(1) Interest income recognized on impaired loans during the year ended October 31, 2018 was $49 (2017 – $23).
(2) Additional interest income of approximately $370 million would have been recorded if the above loans had not been classified as impaired (2017 – $363 million).
(3) Excludes loans acquired under the Federal Deposit Insurance Corporation (FDIC) guarantee related to the acquisition of R-G Premier Bank of Puerto Rico. For loans where the guarantee has expired, the total amount of loans considered impaired is $59 for 2017.
(4) Amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior year amounts have not been restated (refer to Notes 2, 3 and 4).
(5) Allowance for credit losses for residential mortgages, personal loans and credit card loans is assessed on a collective basis.
(6) Allowance for credit losses for business and government loans is individually assessed.
(7) A portion of the existing allowance for credit losses on impaired loans as at October 31, 2017, was reclassified against performing loans with the adoption of IFRS 9 effective November 1, 2017, to conform with current period presentation.

(e) Allowance for credit losses

Key inputs and assumptions

The Bank's allowance calculations are outputs of complex models with a number of underlying assumptions regarding the choice of variable inputs. Some of the key drivers include the following:

- Changes in risk ratings of the borrower or instrument reflecting changes in their credit quality;
- Changes in the volumes of transactions;
- Changes in the forward-looking macroeconomic environment reflected in the variables used in the models such as GDP growth, unemployment rates, commodity prices, and house price indices, which are most closely related with credit losses in the relevant portfolio;
- Changes in macroeconomic scenarios and the probability weights assigned to each scenario; and
- Borrower migration between the three stages which can result from changes to any of the above inputs and assumptions.

(i) Key macroeconomic variables

(i)(a) The following table shows certain key macroeconomic variables used in modelling the allowance for credit losses for Stages 1 and 2. For the base case, optimistic and pessimistic scenarios, the projections are provided for the next 12 months and for the remaining forecast period, which represents a medium-term view.

	Base Case Scenario		Alternative Scenario – Optimistic		Alternative Scenario – Pessimistic	
	Next 12 Months	Remaining Forecast Period	Next 12 Months	Remaining Forecast Period	Next 12 Months	Remaining Forecast Period
Canada						
Real GDP growth, y/y % change	2.2	1.7	2.6	2.1	1.7	1.2
Unemployment rate, average %	5.9	5.9	5.7	5.0	6.2	6.8
Bank of Canada overnight rate target, average %	2.13	2.87	2.25	3.66	1.98	2.10
HPI – Housing Price Index, y/y % change	5.1	3.7	5.4	4.1	4.9	3.3
CPI – Consumer Price Index, y/y % change	2.7	2.1	2.7	2.6	2.7	1.5
USDCAD exchange rate, average	1.24	1.24	1.24	1.20	1.25	1.27
US						
Real GDP growth, y/y % change	2.7	1.7	3.3	2.4	1.9	1.0
Unemployment rate, average %	4.0	4.1	3.7	3.2	4.3	5.0
Mexico						
Real GDP growth, y/y % change	2.0	2.3	2.7	3.2	1.3	1.4
Unemployment rate, average %	3.7	4.2	3.5	3.4	4.0	4.9
Chile						
Real GDP growth, y/y % change	3.9	3.5	5.0	4.8	2.7	2.3
Unemployment rate, average %	6.2	6.4	5.8	4.5	6.7	8.3
Peru						
Real GDP growth, y/y % change	3.9	3.7	4.8	4.7	3.1	2.5
Unemployment rate, average %	6.3	6.1	5.7	4.5	6.8	7.7
Colombia						
Real GDP growth, y/y % change	3.3	3.2	4.0	4.2	3.0	2.2
Unemployment rate, average %	9.1	8.8	8.7	7.4	9.3	10.0
Caribbean						
Real GDP growth, y/y % change	4.0	4.1	5.2	5.4	2.8	2.9
Global						
WTI oil price, average USD/bbl	71	67	75	84	67	54
Copper price, average USD/lb	2.91	3.11	2.98	3.44	2.84	2.84

(i)(b) The table below provides a comparison between the reported Allowance for Credit Losses (ACL) for financial assets in Stage 1 and Stage 2, and the ACL under the base, optimistic and pessimistic scenarios for such assets.

	Reported under IFRS 9	Base case scenario	Optimistic scenario	Pessimistic scenario
ACL (Stage 1 and Stage 2)	**3,475**	**3,467**	**3,345**	**3,618**

(i)(c) The following table illustrates the impact of staging on the Bank's ACL by comparing the allowance if all performing financial assets were in Stage 1 or if all such assets were in Stage 2 to the actual ACL recorded on these assets.

	Stage 1 and 2 ACL under IFRS 9	ACL – All performing loans in Stage 1	Impact of staging
Financial assets	3,475	3,022	(453)

	Stage 1 and 2 ACL under IFRS 9	ACL – All performing loans in Stage 2	Impact of staging
Financial assets	3,475	5,361	1,886

(ii) Allowance for credit losses on loans

	IFRS 9				
($ millions)	Balance as at November 1, 2017	Provision for credit losses	Net write-offs	Other, including foreign currency adjustment	Balance as at October 31, 2018
Residential mortgages	$ 717	$ 104	$ (123)	$ (20)	$ 678
Personal loans	1,879	1,411	(1,166)	(15)	2,109
Credit cards	1,163	898	(854)	6	1,213
Business and government	1,261	166	(208)	(72)	1,147
	$ 5,020	$ 2,579	$ (2,351)	$ (101)	$ 5,147
Presented as:					
Allowance for credit losses on loans	$ 4,920				$ 5,065
Allowance for credit losses on acceptances	16				8
Allowance for credit losses on off-balance sheet exposures	84				74

Allowance for credit losses on loans

	IFRS 9			
As at October 31, 2018 ($ millions)	Stage 1	Stage 2	Stage 3	Total
Residential mortgages	**$ 112**	**$ 206**	**$ 360**	**$ 678**
Personal loans	**578**	**887**	**644**	**2,109**
Credit cards	**401**	**812**	**–**	**1,213**
Business and government	**132**	**260**	**673**	**1,065**
Total[(1)]	**$ 1,223**	**$ 2,165**	**$1,677**	**$ 5,065**

(1) Excludes, allowance for credit losses for other financial assets including acceptances, investment securities, deposits with banks and off-balance sheet credit risks which amounted to $89.

The following table presents the changes to the allowance for credit losses on loans.

	IFRS 9			
As at October 31, 2018 ($ millions)	Stage 1	Stage 2	Stage 3	Total
Residential mortgages				
Balance at beginning of the year	**$ 103**	**$ 214**	**$ 400**	**$ 717**
Provision for credit losses				
Remeasurement[1]	**(131)**	**5**	**151**	**25**
Newly originated or purchased financial assets	**88**	**–**	**–**	**88**
Derecognition of financial assets and maturities	**(2)**	**(7)**	**–**	**(9)**
Changes in models and methodologies	**–**	**–**	**–**	**–**
Transfer to (from):	**–**	**–**	**–**	**–**
Stage 1	**77**	**(65)**	**(12)**	**–**
Stage 2	**(18)**	**106**	**(88)**	**–**
Stage 3	**–**	**(39)**	**39**	**–**
Gross write-offs	**–**	**–**	**(219)**	**(219)**
Recoveries	**–**	**–**	**96**	**96**
Foreign exchange and other movements	**(5)**	**(8)**	**(7)**	**(20)**
Balance at end of year[2]	**$ 112**	**$ 206**	**$ 360**	**$ 678**
Personal loans				
Balance at beginning of the year	**$ 477**	**$ 802**	**$ 600**	**$ 1,879**
Provision for credit losses				
Remeasurement[1]	**(670)**	**629**	**1,015**	**974**
Newly originated or purchased financial assets	**615**	**–**	**–**	**615**
Derecognition of financial assets and maturities	**(82)**	**(96)**	**–**	**(178)**
Changes in models and methodologies	**–**	**–**	**–**	**–**
Transfer to (from):	**–**	**–**	**–**	**–**
Stage 1	**453**	**(442)**	**(11)**	**–**
Stage 2	**(189)**	**284**	**(95)**	**–**
Stage 3	**(4)**	**(286)**	**290**	**–**
Gross write-offs	**–**	**–**	**(1,441)**	**(1,441)**
Recoveries	**–**	**–**	**275**	**275**
Foreign exchange and other movements	**(22)**	**(4)**	**11**	**(15)**
Balance at end of year[2]	**$ 578**	**$ 887**	**$ 644**	**$ 2,109**
Credit cards				
Balance at beginning of the year	**$ 364**	**$ 799**	**$ –**	**$ 1,163**
Provision for credit losses				
Remeasurement[1]	**(276)**	**448**	**593**	**765**
Newly originated or purchased financial assets	**329**	**–**	**–**	**329**
Derecognition of financial assets and maturities	**(91)**	**(105)**	**–**	**(196)**
Changes in models and methodologies	**–**	**–**	**–**	**–**
Transfer to (from):	**–**	**–**	**–**	**–**
Stage 1	**259**	**(259)**	**–**	**–**
Stage 2	**(162)**	**162**	**–**	**–**
Stage 3	**(1)**	**(239)**	**240**	**–**
Gross write-offs	**–**	**–**	**(1,104)**	**(1,104)**
Recoveries	**–**	**–**	**250**	**250**
Foreign exchange and other movements	**(21)**	**6**	**21**	**6**
Balance at end of year[2]	**$ 401**	**$ 812**	**$ –**	**$ 1,213**
Business and government				
Balance at beginning of the year	**$ 178**	**$ 307**	**$ 760**	**$ 1,245**
Provision for credit losses				
Remeasurement[1]	**(93)**	**6**	**264**	**177**
Newly originated or purchased financial assets	**322**	**–**	**–**	**322**
Derecognition of financial assets and maturities	**(108)**	**(164)**	**(68)**	**(340)**
Changes in models and methodologies	**3**	**14**	**–**	**17**
Transfer to (from):	**–**	**–**	**–**	**–**
Stage 1	**63**	**(58)**	**(5)**	**–**
Stage 2	**(187)**	**218**	**(31)**	**–**
Stage 3	**(2)**	**(30)**	**32**	**–**
Gross write-offs	**–**	**–**	**(276)**	**(276)**
Recoveries	**–**	**–**	**68**	**68**
Foreign exchange and other movements	**(3)**	**(2)**	**(69)**	**(74)**
Balance at end of period including off-balance sheet exposures[2]	**$ 173**	**$ 291**	**$ 675**	**$ 1,139**
Less: Allowance for credits losses on off-balance sheet exposures[2][3]	**41**	**31**	**2**	**74**
Balance at end of year[2]	**$ 132**	**$ 260**	**$ 673**	**$ 1,065**

(1) Includes credit risk changes as a result of significant increases in credit risk, changes in credit risk that did not result in a transfer between stages, changes in model inputs and assumptions and changes due to drawdowns of undrawn commitments.

(2) Interest income on impaired loans for residential mortgages, personal loans, credit cards, and business and government loans totaled $370.
(3) Allowance for credit losses on off-balance sheet exposures is recorded in other liabilities in the Consolidated Statement of Financial Position.
(4) Allowance for credit losses on acceptances are recorded against the financial asset in the Consolidated Statement of Financial Position.
(5) There are no accumulated credit losses on purchased or originated credit impaired loans.
(6) During the year ended October 31, 2018, the contractual terms of certain financial assets were modified where the modification did not result in derecognition. The amortized cost of such loans that were modified in Stage 3 before the modification was $185.

The following table presents the allowance for credit losses under IAS 39 as at October 31, 2017.

	IAS 39					
	As at and for the year ended October 31, 2017					
($ millions)	Balance at beginning of year	Write-offs	Recoveries	Provision for credit losses	Other, including foreign currency adjustment	Balance at end of year
Individual	$ 894	$ (501)	$ 55	$ 304	$ (39)	$ 713
Collective	3,498	(2,658)	571	1,952	(8)	3,355
Total before loans acquired under FDIC guarantee	4,392	(3,159)	626	2,256	(47)	4,068
Loans acquired under FDIC guarantee[(1)]	234	(14)	54	(7)	(8)	259
	$ 4,626	$ (3,173)	$ 680	$ 2,249	$ (55)	$ 4,327
Represented by:						
Allowance against impaired loans						$ 2,622
Allowance against performing loans[(2)]						1,446
Total before loans acquired under FDIC guarantee						4,068
Loans acquired under FDIC guarantee[(1)]						259
						$ 4,327

(1) This represents the gross amount of allowance for credit losses as the receivable from FDIC is separately recorded in other assets.
(2) The allowance against performing loans is attributable to business and government loans $625 with the remainder allocated to personal and credit card loans $720 and residential mortgages $101.

(f) Carrying value of exposures by risk rating

Residential mortgages

	As at October 31, 2018			
Category of PD grades ($ millions)	Stage 1	Stage 2	Stage 3[(2)]	Total
Very low	**$ 146,461**	**$ 307**	**$ –**	**$ 146,768**
Low	**58,154**	**378**	**–**	**58,532**
Medium	**11,689**	**972**	**–**	**12,661**
High	**1,615**	**3,515**	**–**	**5,130**
Very high	**25**	**1,779**	**–**	**1,804**
Loans not graded[(1)]	**23,139**	**3,526**	**–**	**26,665**
Default	**–**	**–**	**1,797**	**1,797**
Total	**241,083**	**10,477**	**1,797**	**253,357**
Allowance for credit losses	**112**	**206**	**360**	**678**
Carrying value	**$ 240,971**	**$ 10,271**	**$ 1,437**	**$ 252,679**

(1) Portfolios where the customer account level 'Probability of Default' has not been determined have been included in the 'Loans not graded' category.
(2) Stage 3 includes purchased or originated credit impaired loans.

Personal loans

	As at October 31, 2018			
Category of PD grades ($ millions)	Stage 1	Stage 2	Stage 3[(2)]	Total
Very low	**$ 30,660**	**$ 66**	**$ –**	**$ 30,726**
Low	**26,039**	**151**	**–**	**26,190**
Medium	**8,315**	**402**	**–**	**8,717**
High	**6,686**	**3,647**	**–**	**10,333**
Very high	**58**	**1,362**	**–**	**1,420**
Loans not graded[(1)]	**15,452**	**2,112**	**–**	**17,564**
Default	**–**	**–**	**1,069**	**1,069**
Total	**87,210**	**7,740**	**1,069**	**96,019**
Allowance for credit losses	**578**	**887**	**644**	**2,109**
Carrying value	**$ 86,632**	**$ 6,853**	**$ 425**	**$ 93,910**

(1) Portfolios where the customer account level 'Probability of Default' has not been determined have been included in the 'Loans not graded' category.
(2) Stage 3 includes purchased or originated credit impaired loans.

Credit cards

Category of PD grades ($ millions)	As at October 31, 2018 Stage 1	Stage 2	Stage 3[(2)]	Total
Very low	$ 1,418	$ 5	$ –	$ 1,423
Low	2,436	14	–	2,450
Medium	3,358	71	–	3,429
High	2,929	1,455	–	4,384
Very high	37	697	–	734
Loans not graded[(1)]	2,905	1,159	–	4,064
Default	–	–	–	–
Total	13,083	3,401	–	16,484
Allowance for credit losses	401	812	–	1,213
Carrying value	$ 12,682	$ 2,589	$ –	$ 15,271

(1) Portfolios where the customer account level 'Probability of Default' has not been determined have been included in the 'Loans not graded' category.
(2) Stage 3 includes purchased or originated credit impaired loans.

Undrawn loan commitments – Retail

Category of PD grades ($ millions)	As at October 31, 2018 Stage 1	Stage 2	Stage 3[(2)]	Total
Very low	$ 72,321	$ –	$ –	$ 72,321
Low	16,531	2	–	16,533
Medium	6,029	79	–	6,108
High	2,631	670	–	3,301
Very high	26	367	–	393
Loans not graded[(1)]	14,774	3,364	–	18,138
Default	–	–	–	–
Total	112,312	4,482	–	116,794
Allowance for credit losses	–	–	–	–
Carrying value	$ 112,312	$ 4,482	$ –	$ 116,794

(1) Portfolios where the customer account level 'Probability of Default' has not been determined have been included in the 'Loans not graded' category.
(2) Stage 3 includes purchased or originated credit impaired loans.

Business and government loans

Category of PD grades ($ millions)	As at October 31, 2018 Stage 1	Stage 2	Stage 3[(2)]	Total
Investment grade	$ 87,047	$ 3,770	$ –	$ 90,817
Non-Investment grade	83,730	9,706	–	93,436
Watch list	130	2,689	–	2,819
Loans not graded[(1)]	1,050	652	–	1,702
Default	–	–	2,264	2,264
Total	171,957	16,817	2,264	191,038
Allowance for credit losses	132	260	673	1,065
Carrying value	$ 171,825	$ 16,557	$ 1,591	$ 189,973

(1) Portfolios where the customer account level 'Probability of Default' has not been determined have been included in the 'Loans not graded' category.
(2) Stage 3 includes purchased or originated credit impaired loans.

Undrawn loan commitments – Business and government

Category of PD grades ($ millions)	As at October 31, 2018 Stage 1	Stage 2	Stage 3[(2)]	Total
Investment grade	$ 159,880	$ 1,663	$ –	$ 161,543
Non-Investment grade	56,001	3,445	–	59,446
Watch list	81	977	–	1,058
Loans not graded[(1)]	2,178	28	–	2,206
Default	–	–	4	4
Total	218,140	6,113	4	224,257
Allowance for credit losses	41	31	2	74
Carrying value	$ 218,099	$ 6,082	$ 2	$ 224,183

(1) Portfolios where the customer account level 'Probability of Default' has not been determined have been included in the 'Loans not graded' category.
(2) Stage 3 includes purchased or originated credit impaired loans.

(g) Loans acquired under FDIC guarantee

Loans purchased as part of the acquisition of R-G Premier Bank of Puerto Rico are subject to loss share agreements with the FDIC. Under this agreement, the FDIC guarantees 80% of net loan losses. As at October 31, 2018, the carrying value of the loans covered by the FDIC guarantee was $1.3 billion (October 31, 2017 – $1.4 billion).

A net receivable of $77 million (2017 – $106 million) from the FDIC is included in Other assets in the Consolidated Statement of Financial Position. The remaining guarantee on single family home loans will expire in April 2020.

(h) Loans past due but not impaired[1]

A loan is considered past due when a counterparty has not made a payment by the contractual due date. The following table presents the carrying value of loans that are contractually past due but not classified as impaired because they are either less than 90 days past due or fully secured and collection efforts are reasonably expected to result in repayment, or restoring it to a current status in accordance with the Bank's policy.

As at October 31 ($ millions)	2018				2017[3]			
	31 – 60 days	61 – 90 days	91 days and greater[2]	Total	31 – 60 days	61 – 90 days	91 days and greater	Total
Residential mortgages	**$ 1,290**	**$ 521**	**$ –**	**$ 1,811**	$ 1,035	$ 446	$ 122	$ 1,603
Personal loans	**609**	**322**	**–**	**931**	522	284	–	806
Credit cards	**231**	**154**	**353**	**738**	202	139	75	416
Business and government	**167**	**40**	**–**	**207**	215	55	187	457
Total	**$ 2,297**	**$ 1,037**	**$ 353**	**$ 3,687**	$ 1,974	$ 924	$ 384	$ 3,282

(1) Loans past due 30 days or less are not presented in this analysis as they are not administratively considered past due.
(2) Under IFRS 9, all loans that are 90 days past due are considered impaired with the exception of credit card receivables which are considered impaired when 180 days past due. Prior amounts have not been restated (refer to Notes 3 and 4).
(3) Excludes loans acquired under the FDIC guarantee related to the acquisition of R-G Premier Bank of Puerto Rico.

(i) Purchased credit-impaired loans

Certain financial assets including loans are credit-impaired on initial recognition either through acquisition or origination.

The following table provides details of such assets:

As at October 31 ($ millions)	2018
Unpaid principal balance[1]	**$ 548**
Credit related fair value adjustments	**(168)**
Carrying value	**380**
Stage 3 allowance	**–**
Carrying value net of related allowance	**$ 380**

(1) Represents principal amount owed net of write-offs.

14 Derecognition of Financial Assets

Securitization of residential mortgage loans

The Bank securitizes fully insured residential mortgage loans, Bank originated and others, through the creation of mortgage backed securities (MBS) under the National Housing Act (NHA) MBS program, sponsored by Canada Mortgage Housing Corporation (CMHC). MBS created under the program are sold to Canada Housing Trust (the Trust), a government sponsored entity, under the Canada Mortgage Bond (CMB) program and/or third-party investors. The Trust issues securities to third-party investors.

The sale of mortgages under the above programs does not meet the derecognition requirements, as the Bank retains the pre-payment and interest rate risk associated with the mortgages, which represents substantially all the risk and rewards associated with the transferred assets.

The transferred mortgages continue to be recognized on the Consolidated Statement of Financial Position as residential mortgage loans. Cash proceeds from the transfer are treated as secured borrowings and included in Deposits – Business and government on the Consolidated Statement of Financial Position.

The following table provides the carrying amount of transferred assets that do not qualify for derecognition and the associated liabilities:

As at October 31 ($ millions)	2018[1]	2017[1]
Assets		
Carrying value of residential mortgage loans	**$20,498**	$ 18,178
Other related assets[2]	**2,679**	2,293
Liabilities		
Carrying value of associated liabilities	**21,459**	19,278

(1) The fair value of the transferred assets is $23,237 (2017 – $20,580) and the fair value of the associated liabilities is $22,468 (2017 – $19,863), for a net position of $769 (2017 – $717).
(2) These include cash held in trust and trust permitted investment assets acquired as part of principal reinvestment account that the Bank is required to maintain in order to participate in the programs.

Securitization of personal lines of credit, credit cards and auto loans

The Bank securitizes a portion of its unsecured personal lines of credit, credit card and auto loan receivables through consolidated structured entities. These receivables continue to be recognized on the Consolidated Statement of Financial Position as personal loans and credit cards loans. For further details, refer to Note 15.

Securities sold under repurchase agreements and securities lent
The Bank enters into transactions, such as repurchase agreements and securities lending agreements, where the Bank transfers assets under agreements to repurchase them on a future date and retains all the substantial risks and rewards associated with the assets. The transferred assets remain on the Consolidated Statement of Financial Position.

The following table provides the carrying amount of the transferred assets and the associated liabilities:

As at October 31 ($ millions)	2018[1]	2017[1]
Carrying value of assets associated with:		
Repurchase agreements[2]	**$ 82,816**	$ 86,789
Securities lending agreements	**49,718**	40,535
Total	**132,534**	127,324
Carrying value of associated liabilities[3]	**$ 101,257**	$ 95,843

(1) The fair value of transferred assets is $132,534 (2017 – $127,324) and the fair value of the associated liabilities is $101,257 (2017 – $95,843), for a net position of $31,277 (2017 – $31,481).
(2) Does not include over-collateralization of assets pledged.
(3) Liabilities for securities lending arrangements only include amounts related to cash collateral received. In most cases, securities are received as collateral.

15 Structured Entities

(a) Consolidated structured entities

U.S. multi-seller conduit
The Bank-sponsored U.S. multi-seller conduit purchases high-quality financial assets from independent third parties (the sellers) funded by the issuance of highly rated asset-backed commercial paper. The sellers continue to service the financial assets and provide credit enhancements through overcollateralization protection and cash reserves.

Each asset purchased by the conduit has a deal-specific liquidity facility provided by the Bank in the form of a Liquidity Asset Purchase Agreement (LAPA). The primary purpose of the backstop liquidity facility is to provide an alternative source of financing in the event the conduit is unable to access the asset-backed commercial paper market. The administration agent can require the Bank in its capacity as liquidity provider to perform under its asset-specific LAPA agreements, in which case the Bank is obliged to purchase an interest in the related assets owned by the conduit. The Bank is not obligated to perform under the LAPA agreements in the event the conduit itself is insolvent.

The Bank's liquidity agreements with the conduit call for the Bank to fund full par value of the assets, including defaulted assets, if any, of the conduit. This facility is available to absorb the losses on defaulted assets, if any, in excess of losses absorbed by deal-specific seller credit enhancements. Further, the Bank holds the subordinated note issued by the conduit.

The Bank's exposure from the U.S. conduit through the LAPA, including the obligation to purchase defaulted assets and investment in the conduit's subordinated note, give the Bank the obligation to absorb losses that could potentially be significant to the conduit, which in conjunction with power to direct the conduit's activities, result in the Bank consolidating the U.S. multi-seller conduit.

The conduit's assets are primarily included in business and government loans on the Bank's Consolidated Statement of Financial Position.

There are contractual restrictions on the ability of the Bank's consolidated U.S. multi-seller conduit to transfer funds to the Bank. The Bank is restricted from accessing the conduit's assets under the relevant arrangements. The Bank has no rights to the assets owned by the conduit. In the normal course of business, the assets of the conduit can only be used to settle the obligations of the conduit.

Bank funding vehicles
The Bank uses funding vehicles to facilitate cost-efficient financing of its own operations, including the issuance of covered bonds and notes. These vehicles include Scotiabank Covered Bond Guarantor Limited Partnership, Halifax Receivables Trust, Trillium Credit Card Trust II and Securitized Term Auto Receivables Trust 2016-1, 2017-1, 2017-2, 2018-1 and 2018-2.

Activities of these structured entities are generally limited to holding an interest in a pool of assets or receivables generated by the Bank.

These structured entities are consolidated due to the Bank's decision-making power and ability to use the power to affect the Bank's returns.

Scotiabank Covered Bond Guarantor Limited Partnership
The Bank has a registered covered bond program through which it issues debt that is guaranteed by Scotiabank Covered Bond Guarantor Limited Partnership (the "LP"). Under this program, the LP purchases uninsured residential mortgages from the Bank, which it acquires with funding provided by the Bank.

As at October 31, 2018, $29.1 billion (2017 – $25.7 billion) covered bonds were outstanding and included in Deposits – Business and government on the Consolidated Statement of Financial Position. The Bank's outstanding covered bonds are denominated in U.S. dollars, Australian dollars, British pounds and Euros. As at October 31, 2018, assets pledged in relation to these covered bonds were uninsured residential mortgages denominated in Canadian dollars of $30.7 billion (2017 – $27.8 billion).

Personal line of credit securitization trust
The Bank securitizes a portion of its Canadian unsecured personal line of credit receivables (receivables) through Halifax Receivables Trust (Halifax), a Bank-sponsored structured entity. Halifax issues notes to third-party investors and the Bank, proceeds of which are used to purchase co-ownership interests in receivables originated by the Bank. Recourse of the note holders is limited to the purchased interests.

The Bank is responsible for servicing the transferred receivables as well as performing administrative functions for Halifax. The subordinated notes issued by Halifax are held by the Bank. As at October 31, 2018, $1 billion notes (2017 – $1 billion) were outstanding and included in Deposits – Business and government on the Consolidated Statement of Financial Position. As at October 31, 2018, assets pledged in relation to these notes were $1.3 billion (2017 – $1.3 billion).

Credit card receivables securitization trust

The Bank securitizes a portion of its Canadian credit card receivables (receivables) through Trillium Credit Card Trust II (Trillium), a Bank-sponsored structured entity. Trillium issues notes to third-party investors and the Bank, and the proceeds of such issuance are used to purchase co-ownership interests in receivables originated by the Bank. Recourse of the note holders is limited to the purchased interest.

The Bank is responsible for servicing the transferred receivables as well as performing administrative functions for Trillium. The subordinated notes issued by Trillium are held by the Bank. As at October 31, 2018, US $1.2 billion ($1.6 billion Canadian dollars) (2017 – US $0.9 billion, $1.2 billion Canadian dollars) Class A notes were outstanding and included in Deposits – Business and government on the Consolidated Statement of Financial Position. As at October 31, 2018 assets pledged in relation to these notes were credit card receivables, denominated in Canadian dollars, of $1.8 billion (2017 – $1.3 billion).

Auto loan receivables securitization trusts

The Bank securitizes a portion of its Canadian auto loan receivables (receivables) through Securitized Term Auto Receivables Trust 2016-1, 2017-1, 2017-2, 2018-1 and 2018-2 (START entities). Each entity is a Bank-sponsored structured entity. START entities issue multiple series of Class A notes to third-party investors and may issue Class A and/or subordinated notes to the Bank, and the proceeds of such issuances are used to purchase discrete pools of retail indirect auto loan receivables from the Bank on a fully serviced basis. Recourse of the note holders is limited to the receivables.

The Bank is responsible for servicing the transferred receivables as well as performing administrative functions for START. The subordinated notes and certain Class A notes issued by START are held by the Bank. As at October 31, 2018, the aggregate Class A notes issued to third parties outstanding and included in Deposits – Business and government on the Consolidated Statement of Financial Position were US $1.8 billion ($2.4 billion Canadian dollars) (2017 – US $1.6 billion, $2.1 billion Canadian dollars). As at October 31, 2018, assets pledged in relation to these notes were Canadian auto loan receivables denominated in Canadian dollars of $3 billion (2017 – $2.3 billion).

Other

Assets of other consolidated structured entities are comprised of securities, deposits with banks and other assets to meet the Bank's and customer needs.

(b) Unconsolidated structured entities

The following table provides information about other structured entities in which the Bank has a significant interest but does not control and therefore does not consolidate. A significant interest is generally considered to exist where the Bank is exposed to 10% or more of the unconsolidated structured entities' maximum exposure to loss.

	As at October 31, 2018			
($ millions)	Canadian multi-seller conduits that the Bank administers	Structured finance entities	Capital funding vehicles	Total
Total assets (on structured entity's financial statements)	**$ 3,216**	**$ 4,488**	**$ 1,520**	**$ 9,224**
Assets recognized on the Bank's financial statements				
Trading assets	**3**	**–**	**–**	**3**
Investment securities	**–**	**1,054**	**17**	**1,071**
Loans[1]	**–**	**978**	**45**	**1,023**
	3	**2,032**	**62**	**2,097**
Liabilities recognized on the Bank's financial statements				
Deposits – Business and government	**–**	**–**	**1,458**	**1,458**
Derivative financial instruments	**6**	**–**	**–**	**6**
	6	**–**	**1,458**	**1,464**
Bank's maximum exposure to loss	**$ 3,219**	**$ 2,032**	**$ 62**	**$ 5,313**

	As at October 31, 2017			
($ millions)	Canadian multi-seller conduits that the Bank administers	Structured finance entities	Capital funding vehicles	Total
Total assets (on structured entity's financial statements)	$ 3,127	$ 3,991	$ 1,520	$ 8,638
Assets recognized on the Bank's financial statements				
Trading assets	–	5	–	5
Investment securities	–	1,091	15	1,106
Loans[1]	–	731	40	771
	–	1,827	55	1,882
Liabilities recognized on the Bank's financial statements				
Deposits – Business and government	–	–	1,465	1,465
Derivative financial instruments	6	–	–	6
	6	–	1,465	1,471
Bank's maximum exposure to loss	$ 3,127	$ 1,827	$ 55	$ 5,009

(1) Loan balances are presented net of allowance for credit losses.

The Bank's maximum exposure to loss represents the notional amounts of guarantees, liquidity facilities, and other credit support relationships with the structured entities, the credit risk amount for certain derivative contracts with the entities and the amount invested where the Bank holds an ownership interest in the structured entities. Of the aggregate amount of maximum exposure to loss as at October 31, 2018, the Bank has recorded $2 billion (2017 – $1.8 billion), primarily its interest in the structured entities, on its Consolidated Statement of Financial Position.

Canadian multi-seller conduits that the Bank administers

The Bank sponsors two Canadian multi-seller conduits. The conduits purchase assets from independent third parties (the sellers) funded by the issuance of asset-backed commercial paper. The sellers continue to service the assets and provide credit enhancements through overcollateralization protection and cash reserves. The Bank has no rights to these assets as they are available to support the obligations of the respective programs, but manages for a fee the commercial paper selling programs. To ensure timely repayment of the commercial paper, each asset pool financed by the multi-seller conduits has a deal-specific LAPA with the Bank. Pursuant to the terms of the LAPA, the Bank as the liquidity provider is obligated to purchase non-defaulted assets, transferred by the conduit at the conduit's original cost as reflected in the table above. In most cases, the liquidity agreements do not require the Bank to purchase defaulted assets. Additionally, the Bank has not provided any program-wide credit enhancement to these conduits. The Bank provides additional liquidity facilities to these multi-seller conduits to a maximum amount of $0.8 billion (2017 – $1.9 billion) based on future asset purchases by these conduits.

Although the Bank has power over the relevant activities of the conduits, it has limited exposure to variability in returns, which results in the Bank not consolidating the two Canadian conduits.

Structured finance entities

The Bank has interests in structured entities used to assist corporate clients in accessing cost-efficient financing through their securitization structures. The Bank may act as an administrator, an investor or a combination of both in these types of structures.

Capital funding vehicles

These entities are designed to pass the Bank's credit risk to the holders of the securities. Therefore the Bank does not have exposure or rights to variable returns from these entities.

(c) Other unconsolidated Bank-sponsored entities

The Bank sponsors unconsolidated structured entities including mutual funds, in which it has insignificant or no interest at the reporting date. The Bank is a sponsor when it is significantly involved in the design and formation at inception of the structured entities, and the Bank's name is used by the structured entities to create an awareness of the instruments being backed by the Bank's reputation and obligation. The Bank also considers other factors, such as its continuing involvement and obligations to determine if, in substance, the Bank is a sponsor. The Bank considers mutual funds and managed companies as sponsored entities.

The following table provides information on revenue from unconsolidated Bank-sponsored entities.

As at October 31 ($ millions)	**2018**			2017		
	Funds[1]	Scotia Managed Companies	Total	Funds[1]	Scotia Managed Companies	Total
Revenue	**$ 2,118**	**$ 3**	**$ 2,121**	$ 2,016	$ 5	$ 2,021

(1) Includes mutual funds, other funds and trusts.

The Bank earned revenue of $2,121 million (2017 – $2,021 million) from its involvement with the unconsolidated Bank-sponsored structured entities including mutual funds, for the year ended October 31, 2018, which was comprised of interest income of $1 million (2017 – $1 million), non-interest income – banking of $137 million (2017 – $134 million) and non-interest income – wealth management of $1,983 million (2017 – $1,886 million), including mutual fund, brokerage and investment management and trust fees.

16 Property and Equipment

($ millions)	Land & Building	Equipment	Technology Assets	Leasehold Improvements	Total
Cost					
Balance as at October 31, 2016	$ 2,071	$ 1,728	$ 1,983	$ 1,357	$ 7,139
Additions	169	147	161	126	603
Disposals	(224)	(52)	(41)	(28)	(345)
Foreign currency adjustments and other	(294)	69	(15)	(45)	(285)
Balance as at October 31, 2017	**$ 1,722**	**$ 1,892**	**$ 2,088**	**$ 1,410**	**$ 7,112**
Acquisitions	**214**	**96**	**186**	**97**	**593**
Additions	**142**	**56**	**141**	**148**	**487**
Disposals	**(231)**	**(38)**	**(33)**	**(49)**	**(351)**
Foreign currency adjustments and other	**36**	**95**	**(86)**	**(21)**	**24**
Balance as at October 31, 2018	**$ 1,883**	**$ 2,101**	**$ 2,296**	**$ 1,585**	**$ 7,865**
Accumulated depreciation					
Balance as at October 31, 2016	$ 766	$ 1,362	$ 1,653	$ 838	$ 4,619
Depreciation	47	91	131	71	340
Disposals	(58)	(37)	(40)	(17)	(152)
Foreign currency adjustments and other	(69)	34	(25)	(16)	(76)
Balance as at October 31, 2017	**$ 686**	**$ 1,450**	**$ 1,719**	**$ 876**	**$ 4,731**
Depreciation	**62**	**80**	**143**	**69**	**354**
Disposals	**(56)**	**(35)**	**(24)**	**(17)**	**(132)**
Foreign currency adjustments and other	**13**	**174**	**10**	**31**	**228**
Balance as at October 31, 2018	**$ 705**	**$ 1,669**	**$ 1,848**	**$ 959**	**$ 5,181**
Net book value					
Balance as at October 31, 2017	$ 1,036	$ 442	$ 369	$ 534	$ 2,381[1]
Balance as at October 31, 2018	**$ 1,178**	**$ 432**	**$ 448**	**$ 626**	**$ 2,684[1]**

(1) Includes $36 (2017 – $16) of investment property.

17 Investments in Associates

The Bank had significant investments in the following associates:

	2018					2017
As at October 31 ($ millions)	Country of incorporation	Nature of business	Ownership percentage	Date of financial statements[1]	Carrying value	Carrying value
Thanachart Bank Public Company Limited	**Thailand**	**Banking**	**49.0%**	**October 31, 2018**	**$ 2,961**	$ 2,789
Canadian Tire's Financial Services business (CTFS)[2]	**Canada**	**Financial Services**	**20.0%**	**September 30, 2018**	**518**	542
Bank of Xi'an Co. Ltd.	**China**	**Banking**	**19.9%**	**September 30, 2018**	**772**	711
Maduro & Curiel's Bank N.V.[3]	**Curacao**	**Banking**	**48.1%**	**September 30, 2018**	**304**	284

(1) Represents the date of the most recent financial statements. Where available, financial statements prepared by the associates' management or other published information is used to estimate the change in the Bank's interest since the most recent financial statements.

(2) Canadian Tire has an option to sell to the Bank up to an additional 29% equity interest within the next 10 years at the then fair value, that can be settled, at the Bank's discretion, by issuance of common shares or cash. After 10 years, for a period of six months, the Bank has the option to sell its equity interest back to Canadian Tire at the then fair value. As at October 1, 2014 CTFS had total assets of $5,351 and total liabilities of $4,387.

(3) The local regulator requires financial institutions to set aside reserves for general banking risks. These reserves are not required under IFRS, and represent undistributed retained earnings related to a foreign associated corporation, which are subject to local regulatory restrictions. As of October 31, 2018 these reserves amounted to $62 (2017 – $61).

Summarized financial information of the Bank's significant associates are as follows.

	For the twelve months ended[1]		As at	
($ millions)	Revenue	Net income	Total assets	Total liabilities
Thanachart Bank Public Company Limited	**$ 1,871**	**$ 590**	**$ 39,875**	**$ 34,289**
Canadian Tire's Financial Services business (CTFS)	**1,143**	**348**	**6,256**	**5,279**
Bank of Xi'an Co. Ltd.	**1,123**	**456**	**45,261**	**41,595**
Maduro & Curiel's Bank N.V.	**348**	**92**	**5,832**	**5,165**

($ millions)	Revenue	Net income	Total assets	Total liabilities
	For the twelve months ended and as at September 30, 2017[1]			
Thanachart Bank Public Company Limited	$ 1,718	$ 508	$ 38,050	$ 32,902
Canadian Tire's Financial Services business (CTFS)	1,040	334	6,233	5,235
Bank of Xi'an Co. Ltd.	915	411	41,170	37,821
Maduro & Curiel's Bank N.V.	343	80	5,501	4,896

(1) Based on the most recent available financial statements.

18 Goodwill and Other Intangible Assets

Goodwill

The changes in the carrying amounts of goodwill by cash-generating unit (CGU) are as follows:

($ millions)	Canadian Banking	Global Banking and Markets	Latin America	Caribbean and Central America	Total
Balance as at October 31, 2016	$ 3,403	$ 265	$ 2,461	$ 1,255	$ 7,384
Acquisitions	–	–	–	–	–
Dispositions	(36)	–	–	–	(36)
Foreign currency adjustments and other	18	(10)	(61)	(52)	(105)
Balance as at October 31, 2017	3,385	255	2,400	1,203	7,243
Acquisitions	**1,710**	**–**	**1,164**	**–**	**2,874**
Dispositions	**–**	**–**	**–**	**–**	**–**
Foreign currency adjustments and other	**–**	**5**	**(110)**	**(5)**	**(110)**
Balance as at October 31, 2018	**$ 5,095**	**$ 260**	**$ 3,454**	**$ 1,198**	**$ 10,007**

Impairment testing of goodwill

Goodwill acquired in business combinations is allocated to each of the Bank's group of CGUs that are expected to benefit from the synergies of the particular acquisition. Goodwill is assessed for impairment annually or more frequently if events or circumstances occur that may result in the recoverable amount of the CGU falling below its carrying value.

The Bank determines the carrying value of the CGU using a regulatory capital approach based on credit, market, and operational risks, and leverage, consistent with the Bank's capital attribution for business line performance measurement. The recoverable amount is the higher of fair value less costs of disposal and value in use. The recoverable amount for the CGU has been determined using the fair value less costs of disposal method. In arriving at such value for the CGU, the Bank has used price earnings (P/E) multiples applied to normalized net income for the last four quarters as of the test date, a control premium is added based on a five year weighted average acquisition premium paid for comparable companies, and costs of disposal are deducted from the fair value of the CGU. The resulting recoverable amount determined is then compared to its respective carrying amount to identify any impairment. P/E multiples ranging from 11 to 13.5 times (2017 – 11 to 12.5 times) have been used.

The fair value less costs of disposal of the CGU is sensitive to changes in net income, P/E multiples and control premiums.

Goodwill was assessed for annual impairment as at July 31, 2018 and July 31, 2017 and no impairment was determined to exist.

Management believes that reasonable negative changes in any one key assumption used to determine the recoverable amount of the CGU would not result in an impairment. No significant negative changes were noted as of October 31, 2018.

Intangible assets

Intangible assets consist of assets with indefinite and finite useful lives. Indefinite life intangible assets consist substantially of fund management contracts. The fund management contracts are for the management of open-ended funds. Finite life intangible assets include assets such as computer software, customer relationships and core deposit intangibles.

	Finite life		Indefinite life		
($ millions)	Computer software	Other intangibles	Fund management contracts[1]	Other intangibles	Total
Cost					
Balance as at October 31, 2016	$ 2,737	$ 1,631	$ 2,325	$ 68	$ 6,761
Acquisitions	–	–	–	–	–
Additions	584	5	–	–	589
Disposals	(3)	(56)	–	–	(59)
Foreign currency adjustments and other	(40)	(17)	–	–	(57)
Balance as at October 31, 2017	$ 3,278	$ 1,563	$ 2,325	$ 68	$ 7,234
Acquisitions	47	480	2,090	98	2,715
Additions	673	3	–	–	676
Disposals	(8)	–	–	–	(8)
Foreign currency adjustments and other	(44)	(30)	–	–	(74)
Balance as at October 31, 2018	**$ 3,946**	**$ 2,016**	**$ 4,415**	**$ 166**	**$ 10,543**
Accumulated amortization					
Balance as at October 31, 2016	$ 1,009	$ 995	$ –	$ –	$ 2,004
Amortization	339	82	–	–	421
Disposals	(2)	(18)	–	–	(20)
Foreign currency adjustments and other	(25)	(9)	–	–	(34)
Balance as at October 31, 2017	$ 1,321	$ 1,050	$ –	$ –	$ 2,371
Amortization	409	85	–	–	494
Disposals	(8)	–	–	–	(8)
Foreign currency adjustments and other	(17)	(9)	–	–	(26)
Balance as at October 31, 2018	**$ 1,705**	**$ 1,126**	**$ –**	**$ –**	**$ 2,831**
Net book value					
As at October 31, 2017	$ 1,957[2]	$ 513	$ 2,325	$ 68	$ 4,863
As at October 31, 2018	**$ 2,241[2]**	**$ 890**	**$ 4,415**	**$ 166**	**$ 7,712**

(1) Fund management contracts are attributable to HollisWealth Inc. (formerly DundeeWealth Inc.).
(2) Computer software comprises of purchased software of $483 (2017 – $500), internally generated software of $1,208 (2017 – $981), and in process software not subject to amortization of $550 (2017 – $476).

Impairment testing of indefinite life intangible assets

Indefinite life intangible assets are not amortized and are assessed for impairment annually or more frequently if events or changes in circumstances indicate that the asset may be impaired. Impairment is assessed by comparing the carrying value of the indefinite life intangible asset to its recoverable amount. The recoverable amount of the fund management contracts is based on a value in use approach using the multi-period excess earnings method. This approach uses cash flow projections from management-approved financial budgets which include key assumptions related to market appreciation, net sales of funds, and operating margins taking into consideration past experience and market expectations. The forecast cash flows cover a 5-year period, with a terminal growth rate of 4.5% (2017 – 4.5%) applied thereafter. These cash flows have been discounted at a rate of 10% (2017 – 10%).

Indefinite life intangible assets were assessed for annual impairment as at July 31, 2018 and July 31, 2017 and no impairment was determined to exist.

Management believes that reasonable negative changes in any one key assumption used to determine the recoverable amount would not result in an impairment. No significant negative changes were noted as of October 31, 2018.

19 Other Assets

As at October 31 ($ millions)	2018	2017
Accrued interest	**$ 2,800**	$ 2,176
Accounts receivable and prepaids	**1,878**	1,674
Current tax assets	**657**	327
Margin deposit derivatives	**3,247**	3,041
Segregated fund assets	**2,736**	–
Pension assets (Note 28)	**360**	256
Receivable from brokers, dealers and clients	**2,061**	913
Receivable from the Federal Deposit Insurance Corporation (Note 13)	**77**	106
Other	**3,617**	4,256
Total	**$ 17,433**	$ 12,749

20 Deposits

As at October 31 ($ millions)	2018					2017
	Payable on demand[1]					
	Interest-bearing	Non-interest bearing	Payable after notice[2]	Payable on a fixed date[3]	Total	
Personal	**$ 7,517**	**$ 7,488**	**$ 123,302**	**$ 76,238**	**$ 214,545**	$ 200,030
Business and government	**94,812**	**24,310**	**34,600**	**268,280**	**422,002**	384,988
Financial institutions	**6,510**	**2,804**	**1,895**	**28,778**	**39,987**	40,349
Total	**$ 108,839**	**$ 34,602**	**$ 159,797[4]**	**$ 373,296**	**$ 676,534**	$ 625,367
Recorded in:						
Canada	**$ 84,638**	**$ 17,825**	**$ 122,974**	**$ 247,361**	**$ 472,798**	$ 445,487
United States	**14,080**	**128**	**8,950**	**36,780**	**59,938**	58,070
United Kingdom	**–**	**–**	**152**	**16,695**	**16,847**	12,041
Mexico	**14**	**4,362**	**5,382**	**11,393**	**21,151**	19,419
Peru	**2,738**	**1,284**	**4,129**	**7,062**	**15,213**	15,216
Chile	**3,392**	**3,029**	**146**	**17,613**	**24,180**	11,574
Colombia	**37**	**507**	**3,963**	**5,036**	**9,543**	7,587
Other International	**3,940**	**7,467**	**14,101**	**31,356**	**56,864**	55,973
Total[5]	**$ 108,839**	**$ 34,602**	**$ 159,797**	**$ 373,296**	**$ 676,534**	$ 625,367

(1) Deposits payable on demand include all deposits for which we do not have the right to notice of withdrawal, generally chequing accounts.
(2) Deposits payable after notice include all deposits for which we require notice of withdrawal, generally savings accounts.
(3) All deposits that mature on a specified date, generally term deposits, guaranteed investments certificates and similar instruments.
(4) Includes $141 (2017 – $141) of non-interest bearing deposits.
(5) Deposits denominated in U.S. dollars amount to $219,195 (2017 – $216,018), deposits denominated in Chilean pesos amount to $22,731 (2017 – $11,066), deposits denominated in Mexican pesos amount to $18,341 (2017 – $17,156) and deposits denominated in other foreign currencies amount to $79,582 (2017 – $70,217).

The following table presents the maturity schedule for term deposits in Canada greater than $100,000[1].

($ millions)	Within three months	Three to six months	Six to twelve months	One to five years	Over five years	Total
As at October 31, 2018	**$ 36,670**	**$ 23,913**	**$ 42,830**	**$ 99,734**	**$ 19,872**	**$ 223,019**
As at October 31, 2017	$ 33,678	$ 26,579	$ 31,190	$ 94,563	$ 16,073	$ 202,083

(1) The majority of foreign term deposits are in excess of $100,000.

21 Subordinated Debentures

These debentures are direct, unsecured obligations of the Bank and are subordinate to the claims of the Bank's depositors and other creditors. The Bank, where appropriate, enters into interest rate and cross-currency swaps to hedge the related risks.

As at October 31 ($ millions)			2018	2017
Maturity date	Interest rate (%)	Terms[1]	Carrying value[2]	Carrying value[2]
October 2024	3.036	Redeemable on or after October 18, 2017. After October 18, 2019, interest will be payable at an annual rate equal to the 90-day bankers' acceptance rate plus 1.14%.	**$ 1,740**	$ 1,756
June 2025	8.90	Redeemable at any time.	**259**	260
December 2025[3]	3.367	Redeemable on or after December 8, 2020. After December 8, 2020, interest will be payable at an annual rate equal to the 90 day bankers' acceptance rate plus 2.19%.	**729**	737
December 2025[3]	4.50	US$1,250 million. Interest will be payable semi-annually in arrears on June 16 and December 16 of each year.	**1,645**	1,613
March 2027[3]	2.58	Redeemable on or after March 30, 2022. After March 30, 2022, interest will be payable at an annual rate equal to the 90-day bankers' acceptance rate plus 1.19%.	**1,195**	1,219
November 2037[4]	3.015	JPY 10 billion. Redeemed on November 20, 2017.	**–**	113
April 2038[5]	3.37	JPY 10 billion. Redeemed on April 9, 2018.	**–**	110
August 2085	Floating	US$99 million bearing interest at a floating rate of the offered rate for six-month Eurodollar deposits plus 0.125%. Redeemable on any interest payment date.	**130**	127
			$ 5,698	$ 5,935

(1) In accordance with the provisions of the Capital Adequacy Guideline of the Superintendent, all redemptions are subject to regulatory approval and subject to the terms in the relevant prospectus.
(2) The carrying value of subordinated debentures may differ from par value due to adjustments related to hedge accounting.
(3) These debentures contain non-viability contingent capital (NVCC) provisions. Under such NVCC provisions, the debentures are convertible into a variable number of common shares if OSFI announces that the Bank has ceased, or is about to cease, to be viable, or if a federal or provincial government in Canada publicly announces that the Bank has accepted or agreed to accept a capital injection, or equivalent support, from the federal government or any provincial government or political subdivision or agent thereof without which the Bank would have been determined by OSFI to be non-viable. If such a conversion were to occur, the debentures would be converted into common shares pursuant to an automatic conversion formula defined as 150% of the par value plus accrued and unpaid interest divided by the conversion price. The conversion price is based on the greater of: (i) a floor price of $5.00 or, where applicable, the US dollar equivalent of $5.00 (subject to, in each case, adjustments in certain events as set out in the respective prospectus supplements), and (ii) the current market price of the Bank's common shares at the time of the trigger event (10-day weighted average), where applicable converted from CAD to USD.
(4) On November 29, 2017, the Bank redeemed all outstanding 3.015% subordinated debentures due November 30, 2038 at their par value of JPY 10 billion plus accrued interest.
(5) On April 9, 2018, the Bank redeemed all outstanding 3.370% subordinated debentures due April 9, 2038 at their par value of JPY 10 billion plus accrued interest.

22 Other Liabilities

As at October 31 ($ millions)	2018	2017
Accrued interest	**$ 2,634**	$ 2,172
Accounts payable and accrued expenses	**6,198**	5,867
Current tax liabilities	**435**	408
Deferred tax liabilities (Note 27)	**1,205**	697
Gold and silver certificates and bullion	**5,019**	6,819
Margin and collateral accounts	**6,523**	7,129
Segregated fund liabilities	**2,736**	–
Payables to brokers, dealers and clients	**564**	796
Provisions (Note 23)[(1)]	**181**	213
Allowance for credit losses on off-balance sheet exposures - IFRS 9 (Note 13)	**74**	n/a
Allowance for credit losses on off-balance sheet exposures - IAS 39[(1)]	**n/a**	120
Pension liabilities (Note 28)	**593**	808
Other liabilities of subsidiaries and structured entities	**19,933**	12,954
Other	**6,649**	5,331
Total	**$ 52,744**	$ 43,314

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

23 Provisions

($ millions)	Restructuring	Litigation & other	Total
As at November 1, 2016	$ 277	$ 121	$ 398
Provisions made during the year	–	27	27
Provisions utilized / released during the year	(174)	(38)	(212)
Balance as at October 31, 2017	$ 103	$ 110	$ 213
Provisions made during the year	**–**	**79**	**79**
Provisions utilized / released during the year	**(79)**	**(32)**	**(111)**
Balance as at October 31, 2018	**$ 24**	**$ 157**	**$ 181**

Restructuring charge

During fiscal 2016, the Bank recorded a restructuring provision of $378 million ($278 million after tax) as part of the Bank's efforts to enhance customer experience, reduce costs in a sustainable manner, to achieve greater operational efficiencies, and to simplify the organization. The restructuring charge primarily related to employee severance and was recorded within non-interest expenses. As at October 31, 2018, $24 million of the restructuring provision remains.

Litigation and Other

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

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

24 Common shares, preferred shares and other equity instruments

(a) Common shares

Authorized:

An unlimited number of common shares without nominal or par value.

Issued and fully paid:

As at October 31 ($ millions)	2018 Number of shares	2018 Amount	2017 Number of shares	2017 Amount
Outstanding at beginning of year	**1,199,231,715**	**$ 15,644**	1,207,893,604	$ 15,513
Issued in relation to share-based payments, net (Note 26)	**2,238,468**	**135**	5,338,111	313
Issued in relation to the acquisition of a subsidiary or associated corporation	**33,788,141**	**2,573**	–	–
Repurchased for cancellation under the Normal Course Issuer Bid	**(8,230,700)**	**(118)**	(14,000,000)	(182)
Outstanding at end of year	**1,227,027,624[(1)]**	**$ 18,234**	1,199,231,715[(1)]	$ 15,644

(1) In the normal course of business, the Bank's regulated Dealer subsidiary purchases and sells the Bank's common shares to facilitate trading/institutional client activity. During fiscal 2018, the number of such shares bought and sold was 14,667,143 (2017 – 15,856,738).

Dividend

The dividends paid on common shares in fiscal 2018 and 2017 were $3,985 million ($3.28 per share) and $3,668 million ($3.05 per share), respectively. The Board of Directors approved a quarterly dividend of 85 cents per common share at its meeting on November 26, 2018. This quarterly dividend applies to shareholders of record at the close of business on January 2, 2019, and is payable January 29, 2019.

Common shares issued

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

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

Normal Course Issuer Bid

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

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

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

Non-viability Contingent Capital

The maximum number of common shares issuable on conversion of NVCC subordinated debentures, NVCC subordinated additional tier 1 capital securities and NVCC preferred shares as at October 31, 2018 would be 1,835 million common shares (2017 – 1,757 million common shares) based on the floor price and excluding the impact of any accrued and unpaid interest and any declared but unpaid dividends (refer to Note 21 – Subordinated debentures and Note 24(b) – Preferred shares and Other Equity Instruments for further details).

(b) Preferred shares and other equity instruments

Preferred shares

Authorized:

An unlimited number of preferred shares without nominal or par value.

Issued and fully paid:

	2018				2017			
As at October 31 ($ millions)	Number of shares	Amount	Dividends declared per share	Conversion feature	Number of shares	Amount	Dividends declared per share	Conversion feature
Preferred shares:[a]								
Series 18[b]	**–**	**–**	**0.418750**	**–**	7,497,663	187	0.837500	Series 19
Series 19[b]	**–**	**–**	**0.374547**	**–**	6,302,337	158	0.642626	Series 18
Series 20[c]	**–**	**–**	**0.902500**	**–**	8,039,268	201	0.902500	Series 21
Series 21[c]	**–**	**–**	**0.691967**	**–**	5,960,732	149	0.554501	Series 20
Series 22[d][e]	**9,376,944**	**234**	**0.957500**	**Series 23**	9,376,944	234	0.957500	Series 23
Series 23[d][e]	**2,623,056**	**66**	**0.736967**	**Series 22**	2,623,056	66	0.600126	Series 22
Series 30[d][f]	**6,142,738**	**154**	**0.455000**	**Series 31**	6,142,738	154	0.455000	Series 31
Series 31[d][f]	**4,457,262**	**111**	**0.516968**	**Series 30**	4,457,262	111	0.380126	Series 30
Series 32[d][g]	**11,161,422**	**279**	**0.515752**	**Series 33**	11,161,422	279	0.515752	Series 33
Series 33[d][g]	**5,184,345**	**130**	**0.601968**	**Series 32**	5,184,345	130	0.465159	Series 32
Series 34[d][h][i]	**14,000,000**	**350**	**1.375000**	**Series 35**	14,000,000	350	1.375000	Series 35
Series 36[d][h][j]	**20,000,000**	**500**	**1.375000**	**Series 37**	20,000,000	500	1.375000	Series 37
Series 38[d][h][k]	**20,000,000**	**500**	**1.212500**	**Series 39**	20,000,000	500	1.351175	Series 39
Series 40[d][h][l]	**12,000,000**	**300**	**–**	**Series 41**	–	–	–	–
Total preferred shares	**104,945,767**	**$ 2,624**			120,745,767	$ 3,019		

Terms of preferred shares

	First issue date	Issue price	Initial dividend	Initial dividend payment date	Rate reset spread	Redemption date	Redemption price
Preferred shares[(a)]:							
Series 18[(b)]	March 25, 2008	25.00	0.431500	July 29, 2008	0.00%	April 26, 2018	25.00
Series 19[(b)]	April 26, 2013	25.00	0.189250	July 29, 2013	0.00%	April 26, 2018	25.00
Series 20[(c)]	June 10, 2008	25.00	0.167800	July 29, 2008	0.00%	October 26, 2018	25.00
Series 21[(c)]	October 26, 2013	25.00	0.167875	January 29, 2014	0.00%	October 26, 2018	25.00
Series 22[(d)(e)]	September 9, 2008	25.00	0.482900	January 28, 2009	1.88%	January 26, 2019	25.00
Series 23[(d)(e)]	January 26, 2014	25.00	0.173875	April 28, 2014	1.88%	January 26, 2014 to January 26, 2019	25.50
Series 30[(d)(f)]	April 12, 2010	25.00	0.282200	July 28, 2010	1.00%	April 26, 2020	25.00
Series 31[(d)(f)]	April 26, 2015	25.00	0.095500	July 29, 2015	1.00%	April 26, 2015 to April 26, 2020	25.50
Series 32[(d)(g)]	February 28, 2011	25.00	0.215410	April 27, 2011	1.34%	February 2, 2021	25.00
Series 33[(d)(g)]	February 2, 2016	25.00	0.105690	April 27, 2016	1.34%	February 2, 2016 to February 2, 2021	25.50
Series 34[(d)(h)(i)]	December 17, 2015	25.00	0.497300	April 27, 2016	4.51%	April 26, 2021	25.00
Series 36[(d)(h)(j)]	March 14, 2016	25.00	0.508600	July 27, 2016	4.72%	July 26, 2021	25.00
Series 38[(d)(h)(k)]	September 16, 2016	25.00	0.441800	January 27, 2017	4.19%	January 27, 2022	25.00
Series 40[(d)(h)(l)]	October 12, 2018	25.00	0.362100	January 29, 2019	2.43%	January 27, 2024	25.00

(a) Non-cumulative preferential cash dividends on all series are payable quarterly, as and when declared by the Board. Dividends on the Non-cumulative 5-Year Rate Reset Preferred Shares (Series 22, 30 and 32) and the Non-cumulative 5-Year Rate Reset Preferred Shares Non Viability Contingent Capital (NVCC) (Series 34, 36, 38, and 40) are payable at the applicable rate for the initial five-year fixed rate period ending one day prior to the redemption date. Subsequent to the initial five-year fixed rate period, and resetting every five years thereafter, the dividend on such Rate Reset Preferred Shares will be determined by the sum of the 5-year Government of Canada Yield plus the indicated rate reset spread, multiplied by $25.00. If outstanding, non-cumulative preferential cash dividends on the Series 23, 31, 33, 35, 37, 39, and 41 are payable quarterly, as and when declared by the Board. Dividends on the Non-cumulative 5-Year Rate Reset Preferred Shares (Series 23, 31 and 33) and the Non-cumulative 5-Year Rate Reset Preferred Shares NVCC (Series 35, 37, 39, and 41) are payable, at a rate equal to the sum of the three month Government of Canada Treasury Bill rate plus the rate reset spread of the converted preferred shares, multiplied by $25.00. For each of the years presented, the Bank paid all of the non-cumulative preferred share dividends.

(b) On April 26, 2018, the Bank redeemed all outstanding Non-cumulative Preferred Shares Series 18 and Series 19 and paid dividends of $0.209375 and $0.181788 per share, respectively.

(c) On October 26, 2018, the Bank redeemed all outstanding Non-Cumulative Preferred Shares 20 and 21 and paid a dividend of $0.225625 and $0.187403, respectively, per share.

(d) Holders of Fixed Rate Reset Preferred Shares will have the option to convert shares into an equal number of the relevant series of Floating Rate Preferred Shares on the applicable Rate Reset Series conversion date and every five years thereafter. Holders of Floating Rate Reset Preferred Shares have reciprocal conversion options into the relevant series of Fixed Rate Reset Preferred Shares. With respect to Series 22 and 23, 30 and 31, 32 and 33, 34 and 35, 36 and 37, 38 and 39, and 40 and 41, if the Bank determines that, after giving effect to any Election Notices received, there would be less than 1,000,000 Fixed Rate or Floating Rate Preferred Shares of such Series issued and outstanding on an applicable conversion date, then all of the issued and outstanding preferred shares of such Series will automatically be converted into an equal number of the preferred shares of the other relevant Series.

(e) Holders of Series 22 Non-cumulative 5-Year Rate Reset Preferred Shares will have the option to convert shares into an equal number of Series 23 non-cumulative floating rate preferred shares on January 26, 2019, and on January 26 every five years thereafter. With regulatory approval, the Series 22 preferred shares may be redeemed by the Bank on January 26, 2019, and every five years thereafter, respectively, at $25.00 per share, together with declared and unpaid dividends. With regulatory approval, the Series 23 Non-cumulative Preferred Shares may be redeemed by the Bank at (i) $25.00 together with all declared and unpaid dividends to the date fixed for redemption in the case of redemptions on January 26, 2019 and on January 26 every five years thereafter, or (ii) $25.50 together with all declared and unpaid dividends to the date fixed for redemption on any other date after January 26, 2014.

(f) Holders of Series 30 Non-cumulative 5-Year Rate Reset Preferred Shares will have the option to convert shares into an equal number of Series 31 non-cumulative floating rate preferred shares on April 26, 2020, and on April 26 every five years thereafter. With regulatory approval, the Series 30 preferred shares may be redeemed by the Bank on April 26, 2020, and every five years thereafter, respectively, at $25.00 per share, together with declared and unpaid dividends. With regulatory approval, the Series 31 Non-cumulative Preferred Shares may be redeemed by the Bank at (i) $25.00 together with all declared and unpaid dividends to the date fixed for redemption in the case of redemptions on April 26, 2020 and on April 26 every five years thereafter, or (ii) $25.50 together with all declared and unpaid dividends to the date fixed for redemption on any other date after April 26, 2015.

(g) Holders of Series 32 Non-cumulative 5-Year Rate Reset Preferred Shares will have the option to convert shares into an equal number of Series 33 non-cumulative floating rate preferred shares on February 2, 2021 and on February 2 every five years thereafter. With regulatory approval, the Series 32 preferred shares may be redeemed by the Bank on February 2, 2021, and every five years thereafter, at $25.00 per share, together with declared and unpaid dividends. With regulatory approval, the Series 33 Non-cumulative Preferred Shares may be redeemed by the Bank at (i) $25.00 together with all declared and unpaid dividends to the date fixed for redemption in the case of redemptions on February 2, 2021

and on February 2 every five years thereafter, or (ii) $25.50 together with all declared and unpaid dividends to the date fixed redemption on any other date after February 2, 2016.

(h) These preferred shares contain NVCC provisions necessary for the shares to qualify as Tier 1 regulatory capital under Basel III.

(i) Holders of Series 34 Non-cumulative 5-Year Rate Reset Preferred Shares (NVCC) will have the option to convert shares into an equal number of Series 35 non-cumulative floating rate preferred shares on April 26, 2021, and on April 26 every five years thereafter. With regulatory approval, Series 34 preferred shares may be redeemed by the Bank on April 26, 2021 and every five years thereafter, and for Series 35 preferred shares (NVCC), if applicable, on April 26, 2026 and every five years thereafter, at $25.00 per share, together with declared and unpaid dividends.

(j) Holders of Series 36 Non-cumulative 5-Year Rate Reset Preferred Shares (NVCC) will have the option to convert shares into an equal number of Series 37 non-cumulative floating rate preferred shares (NVCC) on July 26, 2021, and on July 26 every five years thereafter. With regulatory approval, Series 36 preferred shares may be redeemed by the Bank on July 26, 2021 and every five years thereafter, and for Series 37 preferred shares, if applicable, on July 26, 2026 and every five years thereafter, at $25.00 per share, together with declared and unpaid dividends.

(k) Holders of Series 38 Non-cumulative 5-Year Rate Reset Preferred Shares (NVCC) will have the option to convert shares into an equal number of Series 39 non-cumulative floating rate preferred shares (NVCC) on January 27, 2022, and on January 27 every five years thereafter. With regulatory approval, Series 38 preferred shares may be redeemed by the Bank on January 27, 2022 and every five years thereafter, and for Series 39 preferred shares, if applicable, on January 27, 2027 and every five years thereafter, at $25.00 per share, together with declared and unpaid dividends.

(l) On October 12, 2018, the Bank issued 12 million Non-Cumulative 5-year Rate Reset Preferred Shares Series 40 (NVCC) for $300 million. The initial dividend, if declared, will be payable on January 29, 2019. Holder of Series 40, Non-Cumulative 5-Year Rate Reset Preferred Shares (NVCC) will have the option to convert shares into equal number of Non-Cumulative Floating Rate Preferred Shares Series 41 (NVCC), on January 27, 2024 and on January 27 every five years thereafter. With regulatory approval, Series 40 may be redeemed by the Bank on January 27, 2024 and every five years thereafter, and for Series 41, if applicable, on January 27, 2029 and every five years thereafter, at $25.00 per share together with declared and unpaid dividends.

Under NVCC provisions, NVCC preferred shares Series 34, 35, 36, 37, 38, 39, 40 and 41, if outstanding, are convertible into a variable number of common shares if OSFI announces that the Bank has ceased, or is about to cease, to be viable, or if a federal or provincial government in Canada publicly announces that the Bank has accepted or agreed to accept a capital injection, or equivalent support, from the federal government or any provincial government or political subdivision or agent thereof without which the Bank would have been determined by OSFI to be non-viable. If such a conversion were to occur, NVCC preferred shares Series 34, 35, 36, 37, 38, 39, 40 and 41, if outstanding, would be converted into common shares pursuant to an automatic conversion formula defined as 100% times the share value of $25.00 plus declared and unpaid dividends divided by the conversion price. The conversion price is based on the greater of: (i) a floor price of $5.00 or (subject to adjustments in certain events as set out in their respective prospectus supplements), and (ii) the current market price of the Bank's common shares at the time of the trigger event (10-day weighted average).

Other equity instruments

Other equity instruments of $1,560 million (US$1.25 billion) include USD-denominated perpetual fixed to floating rate non-cumulative subordinated additional Tier 1 capital securities (NVCC).

The terms of the notes are described below:

- The price per note is USD $1,000, with interest paid semi-annually in arrears at 4.65% per annum, for the initial five years. Thereafter, the interest will reset quarterly and accrue at a rate per annum equal to three-month LIBOR plus 2.648%.
- While interest is payable on a semi-annual basis for the initial five year period, and quarterly thereafter, the Bank may, at its discretion, with notice, cancel the payments. If the Bank does not pay the interest in full to the note holders, the Bank will not declare dividends on its common or preferred shares or redeem, purchase or otherwise retire such shares until the month commencing after the Bank resumes full interest payments on the notes.
- The notes are redeemable at par 5 years after issuance solely at the option of the Bank, or following a regulatory or tax event, as described in the offering documents. All redemptions are subject to regulatory consent.
- The notes are the Bank's direct unsecured obligations, ranking subordinate to all of the Bank's subordinated indebtedness.
- NVCC provisions require the conversion of these capital instruments into a variable number of common shares if OSFI announces that the Bank has ceased, or is about to cease, to be viable, or if a federal or provincial government in Canada publicly announces that the Bank has accepted or agreed to accept a capital injection, or equivalent support, from the federal government or any provincial government or political subdivision or agent thereof without which the Bank would have been determined by OSFI to be non-viable. If such a conversion were to occur, outstanding NVCC subordinated additional Tier 1 capital securities, would be converted into common shares pursuant to an automatic conversion formula defined as 125% of the par value plus accrued and unpaid interest divided by the conversion price. The conversion price is based on the greater of: (i) the U.S. dollar equivalent of $5.00 (subject to adjustments in certain events as set out in their respective prospectus supplements), and (ii) the U.S. dollar equivalent of the current market price of the Bank's common shares at the time of the trigger event (10-day weighted average). The U.S. dollar equivalents of the floor price and the current market price are based on the mid-day CAD/USD exchange rate on the day prior to the trigger event.

The notes have been determined to be compound instruments that have both equity and liability features. At inception, the fair value of the liability component is initially measured with any residual amount assigned to the equity component. On the date of issuance, the Bank has assigned an insignificant value to the liability component of the notes and, as a result, the proceeds received upon issuance of the notes have been presented as equity. The Bank will continue to monitor events that could impact the value of the liability component.

During the year ended October 31, 2018, the Bank paid interest of US$58 million (2017 - nil) in respect of these notes.

(c) Restrictions on dividend payments

Under the Bank Act, the Bank is prohibited from declaring any dividends on its common or preferred shares when the Bank is, or would be placed by such a declaration, in contravention of the capital adequacy, liquidity or any other regulatory directives issued under the Bank Act. In addition, common share dividends cannot be paid unless all dividends to which preferred shareholders are then entitled have been paid or sufficient funds have been set aside to do so.

In the event that applicable cash distributions on any of the Scotiabank Trust Securities are not paid on a regular distribution date, the Bank has undertaken not to declare dividends of any kind on its preferred or common shares. Similarly, should the Bank fail to declare regular dividends on any of its directly issued outstanding preferred or common shares, cash distributions will also not be made on any of the Scotiabank Trust Securities.

In the event that distributions on the Bank's subordinated additional Tier 1 capital securities (NVCC) are not paid in full, the Bank has undertaken not to declare dividends on its common or preferred shares until the month commencing after such distributions have been made in full.

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

25 Capital Management

The primary regulator over the Bank's consolidated capital adequacy is the Office of the Superintendent of Financial Institutions, Canada (OSFI). The capital adequacy regulations in Canada are largely consistent with international standards set by the Basel Committee on Banking Supervision (BCBS). OSFI requires Canadian deposit-taking institutions to fully implement the 2019 Basel III reforms, without the transitional phase-in provisions for capital deductions (referred to as 'all-in'), and achieve minimums of 7%, 8.5% and 10.5% for CET1, Tier 1 and Total Capital, respectively. OSFI has also designated the Bank as a domestic systemically important bank (D-SIB), increasing its minimum capital ratio requirements by 1% across all tiers of capital effective January 1, 2016, in line with the requirements for global systemically important banks.

In addition to risk-based capital requirements, the Basel III reforms introduced a simpler, non risk-based Leverage ratio requirement to act as a supplementary measure to its risk-based capital requirements. Institutions are expected to maintain a material operating buffer above the 3% minimum.

The Bank's regulatory capital ratios were as follows:

	2018[3]	2017	
As at October 31 ($ millions)	All-in	All-in	Transitional
Capital			
Common Equity Tier 1 Capital	**$ 44,443**	$ 43,352	$ 46,051
Net Tier 1 Capital	**50,187**	49,473	50,623
Total regulatory capital	**57,364**	56,113	57,222
Risk-weighted assets/exposures used in calculation of capital ratios			
CET1 risk-weighted assets[1][2]	**$ 400,507**	$ 376,379	$ 387,292
Tier 1 risk-weighted assets[1][2]	**400,680**	376,379	387,292
Total risk-weighted assets[1][2]	**400,853**	376,379	387,292
Leverage exposures	**1,119,099**	1,052,891	1,053,928
Capital ratios			
Common Equity Tier 1 Capital ratio	**11.1%**	11.5%	11.9%
Tier 1 capital ratio	**12.5%**	13.1%	13.1%
Total capital ratio	**14.3%**	14.9%	14.8%
Leverage ratio	**4.5%**	4.7%	4.8%

(1) In accordance with OSFI's requirements, scalars for CVA risk-weighted assets of 0.80, 0.83 and 0.86 (0.72, 0.77 and 0.81 in 2017) were used to compute the CET1 capital ratio, Tier 1 capital ratio and Total capital ratio, respectively.
(2) Since the introduction of Basel II in 2008, OSFI has prescribed a minimum capital floor for institutions that use the advanced internal ratings-based approach for credit risk. The Basel I capital floor add-on is determined by comparing a capital requirement calculated by reference to Basel I against the Basel III calculation, as specified by OSFI. A shortfall in the Basel III capital requirement as compared with the Basel I floor is added to RWA. OSFI replaced the Basel I regulatory capital floor with a capital floor based on the Basel II standardized approach for credit risk, effective April 30, 2018. Revised capital floor requirements also include risk-weighted assets for market risk and CVA. Under this new Basel II regulatory capital floor requirement, the Bank does not have a capital floor add-on as at October 31, 2018 (as at October 31, 2017 – Basel I floor add-on: CET1 $12.8 billion, Tier 1 $12.6 billion, and Total Capital $12.4 billion).
(3) The Transitional approach is no longer applicable effective Fiscal 2018.

The Bank substantially exceeded the OSFI minimum capital ratios as at October 31, 2018, including the Domestic Stability Buffer requirement.

26 Share-Based Payments

(a) Stock option plans

The Bank grants stock options and stand-alone stock appreciation rights (SARs) as part of the Employee Stock Option Plan. Options to purchase common shares and/or to receive an equivalent cash payment, as applicable, may be granted to selected employees at an exercise price of the higher of the closing price of the Bank's common shares on the Toronto Stock Exchange (TSX) on the trading day prior to the grant date or the volume weighted average trading price for the five trading days immediately preceding the grant date.

Stock Options granted since December 2014 vest 50% at the end of the third year and 50% at the end of the fourth year. This change is prospective and does not impact prior period grants. Stock Options are exercisable no later than 10 years after the grant date. In the event that the expiry date falls within an insider trading blackout period, the expiry date will be extended for 10 business days after the end of the blackout period. As approved by the shareholders, a total of 129 million common shares have been reserved for issuance under the Bank's Employee Stock Option Plan of which 106.8 million common shares have been issued as a result of the exercise of options and 14 million common shares are committed under outstanding options, leaving 8.2 million common shares available for issuance as options. Outstanding options expire on dates ranging from December 5, 2018 to December 7, 2027.

The cost of these options is recognized on a graded vesting basis except where the employee is eligible to retire prior to a tranche's vesting date, in which case the cost is recognized between the grant date and the date the employee is eligible to retire.

The stock option plans include:

- Tandem stock appreciation rights

  Employee stock options granted between December 2, 2005 to November 1, 2009 have Tandem SARs, which provide the employee the choice to either exercise the stock option for shares, or to exercise the Tandem SARs and thereby receive the intrinsic value of the stock option in cash. As at October 31, 2018, 3,900 Tandem SARs were outstanding (2017 – 5,900).

  The share-based payment liability recognized for vested Tandem SARs as at October 31, 2018 was $0.1 million (2017 – nil). The corresponding intrinsic value of this liability as at October 31, 2018 was $0.2 million (2017 – nil).

  In 2018, an expense of $0.6 million (2017 – $0.4 million expense) was recorded in salaries and employee benefits in the Consolidated Statement of Income. This expense is net of losses arising from derivatives used to manage the volatility of share-based payments of nil (2017 – $0.3 million gains).

- Stock options

  Employee stock options granted beginning December 2009 are equity-classified stock options which call for settlement in shares and do not have Tandem SARs features.

  The amount recorded in equity – other reserves for vested stock options as at October 31, 2018 was $164 million (2017 – $177 million).

  In 2018, an expense of $7 million (2017 – $7 million) was recorded in salaries and employee benefits in the Consolidated Statement of Income. As at October 31, 2018, future unrecognized compensation cost for non-vested stock options was $4 million (2017 – $4 million) which is to be recognized over a weighted-average period of 2.07 years (2017 – 1.90 years).

- Stock appreciation rights

  Stand-alone SARs are granted instead of stock options to selected employees in countries where local laws may restrict the Bank from issuing shares. When a SAR is exercised, the Bank pays the appreciation amount in cash equal to the rise in the market price of the Bank's common shares since the grant date.

  During fiscal 2018, 53,056 SARs were granted (2017 – 60,840) and as at October 31, 2018, 1,073,146 SARs were outstanding (2017 – 1,275,608), of which 1,032,495 SARs were vested (2017 – 1,229,330).

  The share-based payment liability recognized for vested SARs as at October 31, 2018 was $14 million (2017 – $31 million). The corresponding intrinsic value of this liability as at October 31, 2018 was $27 million (2017 – $28 million).

  In 2018, a benefit of $3 million (2017 – benefit of $2 million) was recorded in salaries and employee benefits in the Consolidated Statement of Income. This benefit is net of losses arising from derivatives used to manage the volatility of share-based payment of $8 million (2017 – $20 million gains).

Determination of fair values

The share-based payment liability and corresponding expense for SARs and options with Tandem SAR features were quantified using the Black-Scholes option pricing model with the following assumptions and resulting fair value per award:

As at October 31	**2018**	2017
Assumptions		
Risk-free interest rate%	**2.26% - 2.34%**	1.38% - 1.59%
Expected dividend yield	**4.58%**	3.61%
Expected price volatility	**13.75% - 28.12%**	15.3% - 23.38%
Expected life of option	**0.00 - 4.58 years**	0.00 - 4.53 years
Fair value		
Weighted-average fair value	**$ 13.39**	$ 25.72

The share-based payment expense for stock options, i.e., without Tandem SAR features, was quantified using the Black-Scholes option pricing model on the date of grant. The fiscal 2018 and 2017 stock option grants were fair valued using the following weighted-average assumptions and resulting fair value per award:

	2018 Grant	2017 Grant
Assumptions		
Risk-free interest rate %	**1.73%**	1.27%
Expected dividend yield	**3.62%**	3.81%
Expected price volatility	**15.86%**	17.24%
Expected life of option	**6.64 years**	6.67 years
Fair value		
Weighted-average fair value	**$ 7.68**	$ 6.51

The risk-free rate is based on Canadian treasury bond rates interpolated for the maturity equal to the expected life until exercise of the options. Expected dividend yield is based on historical dividend payout. Expected price volatility is determined based on the historical volatility for compensation. For accounting purposes, an average of the market consensus implied volatility for traded options on our common shares and the historical volatility is used.

Details of the Bank's Employee Stock Option Plan are as follows[(1)]:

As at October 31	2018 Number of stock options (000's)	2018 Weighted average exercise price	2017 Number of stock options (000's)	2017 Weighted average exercise price
Outstanding at beginning of year	**15,555**	**$ 57.42**	19,852	$ 54.55
Granted	**988**	**81.81**	1,141	74.14
Exercised as options	**(2,238)**	**51.37**	(5,338)	50.25
Exercised as Tandem SARs	**(19)**	**41.95**	(33)	52.59
Forfeited	**(146)**	**65.93**	(67)	65.97
Expired	**–**	**–**	–	–
Outstanding at end of year[(2)]	**14,140**	**$ 60.02**	15,555	$ 57.42
Exercisable at end of year[(2)]	**10,176**	**$ 55.76**	10,980	$ 53.44
Available for grant	**8,334**		9,156	

As at October 31, 2018	Options Outstanding: Number of stock options (000's)	Options Outstanding: Weighted average remaining contractual life (years)	Options Outstanding: Weighted average exercise price	Options Exercisable: Number of stock options (000's)	Options Exercisable: Weighted average exercise price
Range of exercise prices					
$33.89 to $47.75	**1,571**	**0.84**	**$ 44.02**	**1,571**	**$ 44.02**
$49.93 to $55.21	**1,838**	**3.00**	**$ 50.30**	**1,838**	**$ 50.30**
$55.63 to $60.67	**4,794**	**4.18**	**$ 56.88**	**3,606**	**$ 55.63**
$63.98 to $81.81	**5,937**	**6.40**	**$ 69.80**	**3,161**	**$ 64.91**
	14,140	**4.59**	**$ 60.02**	**10,176**	**$ 55.76**

(1) Excludes SARs.
(2) Includes options of 3,900 Tandem SARs (2017 – 5,900) and 130,000 options originally issued under HollisWealth plans (2017 – 156,520).

(b) Employee share ownership plans

Eligible employees can contribute up to a specified percentage of salary towards the purchase of common shares of the Bank. In general, the Bank matches 50% of eligible contributions, up to a maximum dollar amount, which is expensed in salaries and employee benefits. During 2018, the Bank's contributions totalled $55 million (2017 – $54 million). Contributions, which are used to purchase common shares in the open market, do not result in a subsequent expense to the Bank from share price appreciation.

As at October 31, 2018, an aggregate of 16 million common shares were held under the employee share ownership plans (2017 – 18 million). The shares in the employee share ownership plans are considered outstanding for computing the Bank's basic and diluted earnings per share.

(c) Other share-based payment plans

Other share-based payment plans use notional units that are valued based on the Bank's common share price on the TSX. These units accumulate dividend equivalents in the form of additional units based on the dividends paid on the Bank's common shares. These plans are settled in cash and, as a result, are liability-classified. Fluctuations in the Bank's share price change the value of the units, which affects the Bank's share-based payment expense. As described below, the value of a portion of the Performance Share Unit notional units also varies based on Bank performance. Upon exercise or redemption, payments are made to the employees with a corresponding reduction in the accrued liability.

In 2018, an aggregate expense of $188 million (2017 – $203 million) was recorded in salaries and employee benefits in the Consolidated Statement of Income for these plans. This expense includes losses from derivatives used to manage the volatility of share-based payment of $85 million (2017 – $160 million gains).

As at October 31, 2018, the share-based payment liability recognized for vested awards under these plans was $745 million (2017 – $946 million).

Details of these other share-based payment plans are as follows:

Deferred Stock Unit Plan (DSU)

Under the DSU Plan, senior executives may elect to receive all or a portion of their cash bonus under the Annual Incentive Plan (which is expensed for the year awarded in salaries and employee benefits in the Consolidated Statement of Income) in the form of deferred stock units which vest immediately. In addition the DSU plan allows for eligible executives of the Bank to participate in grants that are not allocated from the Annual Incentive Plan election. These grants are subject to specific vesting schedules. Units are redeemable in cash only when an executive ceases to be a Bank employee, and must be redeemed by December 31 of the year following that event. As at October 31, 2018, there were 939,290 units (2017 – 755,472) awarded and outstanding of which 795,783 units were vested (2017 – 684,017).

Directors' Deferred Stock Unit Plan (DDSU)

Under the DDSU Plan, non-officer directors of the Bank may elect to receive all or a portion of their fee for that fiscal year (which is expensed by the Bank in other expenses in the Consolidated Statement of Income) in the form of deferred stock units which vest immediately. Units are redeemable in cash, only following resignation or retirement, and must be redeemed by December 31 of the year following that event. As at October 31, 2018, there were 314,424 units outstanding (2017 – 299,867).

Restricted Share Unit Plan (RSU)

Under the RSU Plan, selected employees receive an award of restricted share units which, for the majority of grants, vest at the end of three years. There are certain grants that provide for a graduated vesting schedule. Upon vesting all RSU units are paid in cash to the employee. The share-based payment expense is recognized evenly over the vesting period except where the employee is eligible to retire prior to the vesting date in which case, the expense is recognized between the grant date and the date the employee is eligible to retire. As at October 31, 2018, there were 2,639,165 units (2017 – 2,197,100) awarded and outstanding of which 1,665,885 were vested (2017 – 1,497,340).

Performance Share Unit Plan (PSU)

Eligible executives receive an award of performance share units, for the majority of grants vest at the end of three years. One grant provides for a graduated vesting schedule which includes a specific performance factor calculation. A portion of the PSU awards are subject to performance criteria measured over a three-year period whereby a multiplier factor is applied which impacts the incremental number of outstanding shares due to employees. The three-year performance measures include return on equity compared to target and total shareholder return relative to a comparator group selected prior to the granting of the award. The Bank uses a probability-weighted-average of potential outcomes to estimate the multiplier impact. The share-based payment expense is recognized over the vesting period except where the employee is eligible to retire prior to the vesting date; in which case, the expense is recognized between the grant date and the date the employee is eligible to retire. This expense varies based on changes in the Bank's share price and the Bank's performance compared to the performance measures. Upon vesting, the units are paid in cash to the employee. As at October 31, 2018, there were 7,813,011 units (2017 – 8,250,143) outstanding subject to performance criteria, of which 6,403,107 units were vested (2017 – 6,718,738).

Deferred Performance Plan

Under the Deferred Performance Plan, a portion of the bonus received by Global Banking and Markets employees (which is accrued and expensed in the year to which it relates) is allocated to qualifying employees in the form of units. These units are subsequently paid in cash to the employees over each of the following three years. Changes in the value of the units, which arise from fluctuations in the market price of the Bank's common shares, are expensed in the same manner as the Bank's other liability-classified share-based payment plans in the salaries and employee benefits expense in the Consolidated Statement of Income. As at October 31, 2018, there were 1,251,576 units outstanding (2017 – 1,587,037). November 30, 2017 was the last grant under this plan, there will be no further grants.

27 Corporate Income Taxes

Corporate income taxes recorded in the Bank's consolidated financial statements for the years ended October 31 are as follows:

(a) Components of income tax provision

For the year ended October 31 ($ millions)	**2018**	2017	2016
Provision for income taxes in the Consolidated Statement of Income:			
Current income taxes:			
Domestic:			
Federal	**$ 797**	$ 533	$ 467
Provincial	**633**	424	386
Adjustments related to prior periods	**(25)**	24	4
Foreign	**994**	903	935
Adjustments related to prior periods	**(14)**	(29)	(19)
	2,385	1,855	1,773
Deferred income taxes:			
Domestic:			
Federal	**34**	33	141
Provincial	**16**	16	70
Foreign	**(53)**	129	46
	(3)	178	257
Total provision for income taxes in the Consolidated Statement of Income	**$ 2,382**	$ 2,033	$ 2,030
Provision for income taxes in the Consolidated Statement of Changes in Equity:			
Current income taxes	**$ (136)**	$ 82	$ (158)
Deferred income taxes	**(193)**	198	(168)
	(329)	280	(326)
Reported in:			
Other Comprehensive Income	**(145)**	275	(322)
Retained earnings	**(194)**	(1)	(10)
Accumulated Other Comprehensive Income	**18**	–	–
Common shares	**(10)**	1	1
Other reserves	**2**	5	5
Total provision for income taxes in the Consolidated Statement of Changes in Equity	**(329)**	280	(326)
Total provision for income taxes	**$ 2,053**	$ 2,313	$ 1,704
Provision for income taxes in the Consolidated Statement of Income includes:			
Deferred tax expense (benefit) relating to origination/reversal of temporary differences	**$ 64**	$ 191	$ 372
Deferred tax expense (benefit) of tax rate changes	**(2)**	(2)	(4)
Deferred tax expense (benefit) of previously unrecognized tax losses, tax credits and temporary differences	**(65)**	(11)	(111)
	$ (3)	$ 178	$ 257

(b) Reconciliation to statutory rate

Income taxes in the Consolidated Statement of Income vary from the amounts that would be computed by applying the composite federal and provincial statutory income tax rate for the following reasons:

	2018		2017		2016	
For the year ended October 31 ($ millions)	Amount	Percent of pre-tax income	Amount	Percent of pre-tax income	Amount	Percent of pre-tax income
Income taxes at Canadian statutory rate	**$ 2,943**	**26.5%**	$ 2,715	26.4%	$ 2,485	26.4%
Increase (decrease) in income taxes resulting from:						
Lower average tax rate applicable to subsidiaries and foreign branches	**(439)**	**(3.9)**	(286)	(2.8)	(234)	(2.5)
Tax-exempt income from securities	**(90)**	**(0.8)**	(407)	(3.9)	(220)	(2.3)
Deferred income tax effect of substantively enacted tax rate changes	**(2)**	**–**	(2)	–	(4)	–
Other, net	**(30)**	**(0.3)**	13	0.1	3	–
Total income taxes and effective tax rate	**$ 2,382**	**21.5%**	$ 2,033	19.8%	$ 2,030	21.6%

(c) Deferred taxes

Significant components of the Bank's deferred tax assets and liabilities are as follows:

	Statement of Income		Statement of Financial Position	
	For the year ended		As at	
October 31 ($ millions)	2018	2017	2018	2017
Deferred tax assets:				
Loss carryforwards	**$ 73**	$ 62	**$ 338**	$ 417
Allowance for credit losses	**(177)**	45	**877**	793
Deferred compensation	**41**	(25)	**178**	219
Deferred income	**(68)**	(124)	**476**	405
Property and equipment	**48**	(19)	**417**	133
Pension and other post-retirement benefits	**16**	(6)	**536**	720
Securities	**(17)**	(17)	**199**	169
Other	**(235)**	(169)	**633**	640
Total deferred tax assets	**$ (319)**	$ (253)	**$ 3,654**	$ 3,496
Deferred tax liabilities:				
Deferred income	**$ (22)**	$ (21)	**$ 156**	$ 133
Property and equipment	**(93)**	(32)	**137**	138
Pension and other post-retirement benefits	**(12)**	(9)	**110**	136
Securities	**(8)**	111	**166**	126
Intangible assets	**69**	(53)	**1,788**	1,094
Other	**(250)**	(427)	**564**	853
Total deferred tax liabilities	**$ (316)**	$ (431)	**$ 2,921**	$ 2,480
Net deferred tax assets (liabilities)(1)	**$ (3)**	$ 178	**$ 733**	$ 1,016

(1) For Consolidated Statement of Financial Position presentation, deferred tax assets and liabilities are assessed by legal entity. As a result, the net deferred tax assets of $733 (2017 – $1,016) are represented by deferred tax assets of $1,938 (2017 – $1,713), and deferred tax liabilities of $1,205 (2017 – $697) on the Consolidated Statement of Financial Position.

The major changes to net deferred taxes were as follows:

For the year ended October 31 ($ millions)	2018	2017
Balance at beginning of year	**$ 1,016**	$ 1,410
Deferred tax benefit (expense) for the year recorded in income	**3**	(178)
Deferred tax benefit (expense) for the year recorded in equity	**193**	(198)
Acquired in business combinations	**(493)**	–
Other	**14**	(18)
Balance at end of year	**$ 733**	$ 1,016

The tax related to temporary differences, unused tax losses and unused tax credits for which no deferred tax asset is recognized in the Consolidated Statement of Financial Position amounts to $14 million (October 31, 2017 – $82 million). The amount related to unrecognized losses is $7 million, which will expire as follows: $1 million in 2020 and beyond and $6 million in 2023.

Included in the net deferred tax asset are tax benefits of $92 million (2017 – $92 million) that have been recognized in certain Canadian and foreign subsidiaries that have incurred losses in either the current or the preceding year. In determining if it is appropriate to recognize these tax benefits, the Bank relied on projections of future taxable profits.

The amount of taxable temporary differences associated with investments in subsidiaries, associates and interests in joint ventures for which deferred tax liabilities have not been recognized at October 31, 2018 is approximately $33 billion (2017 – $27 billion).

Reassessment of dividend deductions

In November 2016, the Bank received a federal reassessment of $179 million for tax and interest as a result of the Canada Revenue Agency denying the tax deductibility of certain Canadian dividends received during the 2011 taxation year. In August 2017, the Bank received a reassessment of $185 million for tax and interest for the 2012 taxation year. The circumstances of the dividends subject to the reassessment are similar to those

prospectively addressed by recently enacted rules which had been introduced in the 2015 Canadian federal budget. In June 2018, the Bank received a reassessment of $211 million for tax and interest in respect of the same circumstances for the 2013 taxation year. The Bank is confident that its tax filing position was appropriate and in accordance with the relevant provisions of the Income Tax Act (Canada), and intends to vigorously defend its position.

28 Employee Benefits

The Bank sponsors a number of employee benefit plans, including pensions (defined benefit and defined contribution) and other benefit plans (post-retirement benefits and other long-term employee benefits) for most of its employees globally. The information presented below relates to the Bank's principal plans; other plans operated by certain subsidiaries of the Bank are not considered material and are not included in these disclosures.

Global pension plans

The principal pension plans include plans in Canada, the US, Mexico, the UK, Ireland, Jamaica, Trinidad & Tobago and other countries in the Caribbean in which the Bank operates. The Bank has a strong and well defined governance structure to manage these global obligations. The investment policy for each principal plan is reviewed periodically and all plans are in good standing with respect to legislation and local regulations.

Actuarial valuations for funding purposes for the Bank's funded pension plans are conducted as required by applicable legislation. The purpose of the actuarial valuation is to determine the funded status of the plans on a going-concern and statutory basis and to determine the required contributions. The plans are funded in accordance with applicable pension legislation and the Bank's funding policies such that future benefit promises based on plan provisions are well secured. The assumptions used for the funding valuations are set by independent plan actuaries on the basis of the requirements of the local actuarial standards of practice and statutes.

Scotiabank Pension Plan (Canada)

The most significant pension plan is the Scotiabank Pension Plan (SPP) in Canada, a defined benefit pension plan (which includes an optional defined contribution (DC) component for employees in Canada hired on or after January 1, 2016) which was recently amended to include a defined contribution pension plan for employees in Canada hired on or after May 1, 2018 (the defined benefit provision of the pension plan is closed to employees hired on or after May 1, 2018). As the administrator of the SPP, the Bank has established a well-defined governance structure and policies to maintain compliance with legislative and regulatory requirements under OSFI and the Canada Revenue Agency. The Bank appoints a number of committees to oversee and make decisions related to the administration of the SPP. Certain committees are also responsible for the investment of the assets of the SPP Fund and for monitoring the investment managers and performance.

- The Human Resources Committee (HRC) of the Board approves the charter of the Pension Administration and Investment Committee (PAIC), reviews reports, and approves the investment policy. The HRC also reviews and recommends any amendments to the SPP to the Board of Directors.
- PAIC is responsible for recommending the investment policy to the HRC, for appointing and monitoring investment managers, and for reviewing auditor and actuary reports. PAIC also monitors the administration of member pension benefits.
- The Scotiabank Master Trust Committee (MTC) invests assets in accordance with the investment policy and all applicable legislation. The MTC assigns specific mandates to investment managers. PAIC and the MTC both have independent member representation on the committees.
- The Capital Accumulation Plans (CAP) Committee is responsible for the administration and investment of the DC component of the SPP including the selection and monitoring of investment options available to DC participants.

Actuarial valuations for funding purposes for the SPP are conducted on an annual basis. The most recent funding valuation was conducted as of November 1, 2017. Contributions are being made to the SPP in accordance with this valuation and are shown in the table in b) below. The assumptions used for the funding valuation are set by independent plan actuaries on the basis of the requirements of the Canadian Institute of Actuaries and applicable regulation.

Other benefit plans

The principal other benefit plans include plans in Canada, the US, Mexico, Uruguay, the UK, Jamaica, Trinidad & Tobago, Colombia and other countries in the Caribbean in which the Bank operates. The most significant other benefit plans provided by the Bank are in Canada.

Key assumptions

The financial information reported below in respect of pension and other benefit plans is based on a number of assumptions. The most significant assumption is the discount rate used to determine the defined benefit obligation, which is set by reference to the yields on high quality corporate bonds that have durations that match the terms of the Bank's obligations. Separate discount rates are used to determine the annual benefit expense in Canada and the US. These rates are determined with reference to the yields on high quality corporate bonds with durations that match the various components of the annual benefit expense. The discount rate used to determine the annual benefit expense for all other plans continues to be the same as the rate used to determine the defined benefit obligation at the beginning of the period. Other assumptions set by management are determined in reference to market conditions, plan-level experience, best practices and future expectations. The key weighted-average assumptions used by the Bank for the measurement of the benefit obligation and benefit expense for all of the Bank's principal plans are summarized in the table in f) below.

Risk management

The Bank's defined benefit pension plans and other benefit plans expose the Bank to a number of risks. Some of the more significant risks include interest rate risk, investment risk, longevity risk and health care cost increases, among others. These risks could result in higher defined benefit expense and a higher defined benefit obligation to the extent that:

- there is a decline in discount rates; and/or
- plan assets returns are less than expected; and/or
- plan members live longer than expected; and/or
- health care costs are higher than assumed.

In addition to the governance structure and policies in place, the Bank manages risks by regularly monitoring market developments and asset investment performance. The Bank also monitors regulatory and legislative changes along with demographic trends and revisits the investment strategy and/or plan design as warranted.

a) Relative size of plan obligations and assets

For the year ended October 31, 2018	Pension plans			Other benefit plans	
	Canada				
	SPP	Other	International	Canada	International
Percentage of total benefit obligations	**70%**	**14%**	**16%**	**58%**	**42%**
Percentage of total plan assets	**72%**	**9%**	**19%**	**16%**	**84%**
Percentage of total benefit expense(1)	**82%**	**16%**	**2%**	**39%**	**61%**

For the year ended October 31, 2017	Pension plans			Other benefit plans	
	Canada				
	SPP	Other	International	Canada	International
Percentage of total benefit obligations	74%	11%	15%	63%	37%
Percentage of total plan assets	76%	6%	18%	18%	82%
Percentage of total benefit expense(1)	80%	16%	4%	51%	49%

(1) Excludes non-routine benefit expense items such as past service costs, curtailment charges and settlement charges.

b) Cash contributions and payments

The table below shows the cash contributions and payments made by the Bank to its principal plans in 2018, and the two prior years.

Contributions to the principal plans for the year ended October 31 ($ millions)	2018	2017	2016
Defined benefit pension plans (cash contributions to fund the plans, including paying beneficiaries under the unfunded pension arrangements)			
SPP (excluding DC provision)	**$ 238**	$ 286	$ 187
All other plans	**78**	185	77
Other benefit plans (cash contributions mainly in the form of benefit payments to beneficiaries)	**61**	51	45
Defined contribution pension plans (cash contributions)	**41**	35	31
Total contributions(1)	**$ 418**	$ 557	$ 340

(1) Based on preliminary estimates, the Bank expects to make contributions of $238 to the SPP (excluding the DC provision), $51 to all other defined benefit pension plans, $65 to other benefit plans and $63 to all other defined contribution plans for the year ending October 31, 2019.

c) Funded and unfunded plans

The excess (deficit) of the fair value of assets over the benefit obligation at the end of the year includes the following amounts for plans that are wholly unfunded and plans that are wholly or partly funded.

As at October 31 ($ millions)	Pension plans			Other benefit plans		
	2018	2017	2016	2018	2017	2016
Benefit obligation						
Benefit obligation of plans that are wholly unfunded	**$ 400**	$ 418	$ 408	**$ 1,101**	$ 1,324	$ 1,310
Benefit obligation of plans that are wholly or partly funded	**7,868**	8,424	8,731	**273**	334	372
Funded status						
Benefit obligation of plans that are wholly or partly funded	**$ 7,868**	$ 8,424	$ 8,731	**$ 273**	$ 334	$ 372
Fair value of assets	**8,037**	8,329	7,770	**240**	266	284
Excess (deficit) of fair value of assets over benefit obligation of wholly or partly funded plans	**$ 169**	$ (95)	$ (961)	**$ (33)**	$ (68)	$ (88)
Benefit obligation of plans that are wholly unfunded	**400**	418	408	**1,101**	1,324	1,310
Excess (deficit) of fair value of assets over total benefit obligation	**$ (231)**	$ (513)	$ (1,369)	**$ (1,134)**	$ (1,392)	$ (1,398)
Effect of asset limitation and minimum funding requirement	**(2)**	(39)	(60)	**–**	–	–
Net asset (liability) at end of year	**$ (233)**	$ (552)	$ (1,429)	**$ (1,134)**	$ (1,392)	$ (1,398)

d) Financial information

The following tables present financial information related to the Bank's principal plans.

	Pension plans			Other benefit plans		
For the year ended October 31 ($ millions)	**2018**	2017	2016	**2018**	2017	2016
Change in benefit obligation						
Benefit obligation at beginning of year	**$ 8,842**	$ 9,139	$ 8,113	**$ 1,658**	$ 1,682	$ 1,639
Current service cost	**334**	330	284	**30**	39	39
Interest cost on benefit obligation	**309**	297	314	**70**	72	77
Employee contributions	**22**	24	24	**–**	–	–
Benefits paid	**(1,012)**	(724)	(593)	**(90)**	(76)	(71)
Actuarial loss (gain)	**(495)**	(46)	1,119	**(96)**	(36)	95
Past service cost	**5**	–	(16)	**(196)[2]**	4	(77)
Business acquisition	**264**	–	–	**6**	1	9
Settlements	**(2)**	(157)	–	**–**	–	–
Foreign exchange	**1**	(21)	(106)	**(8)**	(28)	(29)
Benefit obligation at end of year	**$ 8,268**	$ 8,842	$ 9,139	**$ 1,374**	$ 1,658	$ 1,682
Change in fair value of assets						
Fair value of assets at beginning of year	**8,329**	7,770	7,615	**266**	284	307
Interest income on fair value of assets	**305**	273	310	**20**	19	22
Return on plan assets in excess of (less than) interest income on fair value of assets	**(166)**	700	275	**(11)**	1	5
Employer contributions	**316**	471	264	**61**	51	45
Employee contributions	**22**	24	24	**–**	–	–
Benefits paid	**(1,012)**	(724)	(593)	**(90)**	(76)	(71)
Administrative expenses	**(14)**	(13)	(12)	**–**	–	–
Business acquisition	**251**	–	–	**–**	–	2
Settlements	**(2)**	(157)	–	**–**	(1)	–
Foreign exchange	**8**	(15)	(113)	**(6)**	(12)	(26)
Fair value of assets at end of year	**$ 8,037**	$ 8,329	$ 7,770	**$ 240**	$ 266	$ 284
Funded status						
Excess (deficit) of fair value of assets over benefit obligation at end of year	**(231)**	(513)	(1,369)	**(1,134)**	(1,392)	(1,398)
Effect of asset limitation and minimum funding requirement[1]	**(2)**	(39)	(60)	**–**	–	–
Net asset (liability) at end of year	**$ (233)**	$ (552)	$ (1,429)	**$ (1,134)**	$ (1,392)	$ (1,398)
Recorded in:						
Other assets in the Bank's Consolidated Statement of Financial Position	**360**	256	184	**–**	1	–
Other liabilities in the Bank's Consolidated Statement of Financial Position	**(593)**	(808)	(1,613)	**(1,134)**	(1,393)	(1,398)
Net asset (liability) at end of year	**$ (233)**	$ (552)	$ (1,429)	**$ (1,134)**	$ (1,392)	$ (1,398)
Annual benefit expense						
Current service cost	**334**	330	284	**30**	39	39
Net interest expense (income)	**7**	29	9	**50**	53	55
Administrative expenses	**12**	11	13	**–**	–	–
Past service costs	**5**	–	(16)	**(196)[2]**	4	(77)
Amount of settlement (gain) loss recognized	**–**	–	–	**–**	–	–
Remeasurement of other long-term benefits	**–**	–	–	**(10)**	(3)	(20)
Benefit expense (income) recorded in the Consolidated Statement of Income	**$ 358**	$ 370	$ 290	**$ (126)**	$ 93	$ (3)
Defined contribution benefit expense	**$ 41**	$ 35	$ 31	**$ –**	$ –	$ –
Remeasurements						
(Return) on plan assets in excess of interest income on fair value of assets	**166**	(700)	(275)	**11**	1	(3)
Actuarial loss (gain) on benefit obligation	**(495)**	(46)	1,119	**(86)**	(35)	113
Change in the asset limitation	**(40)**	(25)	18	**–**	–	–
Remeasurements recorded in OCI	**$ (369)**	$ (771)	$ 862	**$ (75)**	$ (34)	$ 110
Total benefit cost	**$ 30**	$ (366)	$ 1,183	**$ (201)**	$ 59	$ 107
Additional details on actual return on assets and actuarial (gains) and losses						
Actual return on assets (net of administrative expenses)	**$ 125**	$ 960	$ 573	**$ 9**	$ 20	$ 27
Actuarial (gains) and losses from changes in demographic assumptions	**(148)**	(6)	9	**(23)**	–	(5)
Actuarial (gains) and losses from changes in financial assumptions	**(548)**	(71)	1,116	**(92)**	(13)	133
Actuarial (gains) and losses from changes in experience	**201**	31	(6)	**19**	(23)	(33)
Additional details on fair value of pension plan assets invested						
In Scotiabank securities (stock, bonds)	**377**	457	410	**3**	4	–
In property occupied by Scotiabank	**4**	4	5	**–**	–	–
Change in asset ceiling/onerous liability						
Asset ceiling /onerous liability at end of prior year	**39**	60	41	**–**	–	–
Interest expense	**3**	5	5	**–**	–	–
Remeasurements	**(40)**	(25)	18	**–**	–	–
Foreign exchange	**–**	(1)	(4)	**–**	–	–
Asset ceiling /onerous liability at end of year	**$ 2**	$ 39	$ 60	**$ –**	$ –	$ –

(1) The recognized asset is limited by the present value of economic benefits available from a reduction in future contributions to a plan and from the ability to pay plan expenses from the fund.

(2) The past service cost for other benefit plans includes a decrease of $203 million in the first quarter of fiscal 2018, related to modifications to the Bank's postretirement benefits plan.

e) Maturity profile of the defined benefit obligation

The weighted average duration of the total benefit obligation at October 31, 2018 is 14.4 years (2017 – 15.3 years, 2016 – 15.3 years).

	Pension plans			Other benefit plans		
For the year ended October 31	**2018**	2017	2016	**2018**	2017	2016
Disaggregation of the benefit obligation (%)						
Canada						
Active members	**57%**	58%	60%	**9%**	29%	33%
Inactive and retired members	**43%**	42%	40%	**91%**	71%	67%
Total	**100%**	100%	100%	**100%**	100%	100%
Mexico						
Active members	**26%**	27%	29%	**54%**	55%	57%
Inactive and retired members	**74%**	73%	71%	**46%**	45%	43%
Total	**100%**	100%	100%	**100%**	100%	100%
United States						
Active members	**45%**	48%	33%	**34%**	35%	38%
Inactive and retired members	**55%**	52%	67%	**66%**	65%	62%
Total	**100%**	100%	100%	**100%**	100%	100%

f) Key assumptions (%)

The key weighted-average assumptions used by the Bank for the measurement of the benefit obligation and benefit expense for all of the Bank's principal plans are summarized as follows:

	Pension plans			Other benefit plans		
For the year ended October 31	**2018**	2017	2016	**2018**	2017	2016
Benefit obligation at end of year						
Discount rate – all plans	**4.35%**	3.90%	3.86%	**5.54%**	4.86%	4.74%
Discount rate – Canadian plans only	**4.10%**	3.60%	3.60%	**3.96%**	3.53%	3.42%
Rate of increase in future compensation(1)	**2.80%**	2.76%	2.72%	**3.83%**	4.07%	4.09%
Benefit expense (income) for the year						
Discount rate – All plans						
Discount rate for defined benefit obligations	**3.90%**	3.86%	4.64%	**4.86%**	4.74%	5.33%
Discount rate for net interest cost	**3.55%**	3.33%	4.03%	**4.60%**	4.42%	4.91%
Discount rate for service cost	**4.04%**	4.01%	4.83%	**5.11%**	5.09%	5.62%
Discount rate for interest on service cost	**3.77%**	3.64%	4.31%	**5.04%**	4.94%	5.56%
Discount rate – Canadian plans only						
Discount rate for defined benefit obligations	**3.60%**	3.60%	4.40%	**3.53%**	3.42%	4.27%
Discount rate for net interest cost	**3.20%**	3.00%	3.70%	**3.18%**	2.98%	3.67%
Discount rate for service cost	**3.70%**	3.70%	4.60%	**3.76%**	3.75%	4.54%
Discount rate for interest on service cost	**3.40%**	3.30%	4.00%	**3.66%**	3.56%	4.44%
Rate of increase in future compensation(1)	**2.76%**	2.72%	2.75%	**4.07%**	4.09%	4.41%
Health care cost trend rates at end of year						
Initial rate	**n/a**	n/a	n/a	**5.81%**	5.99%	6.12%
Ultimate rate	**n/a**	n/a	n/a	**4.66%**	4.93%	4.93%
Year ultimate rate reached	**n/a**	n/a	n/a	**2040**	2030	2030
Assumed life expectancy in Canada (years)						
Life expectancy at 65 for current pensioners – male	**23.3**	23.2	23.2	**23.3**	23.2	23.2
Life expectancy at 65 for current pensioners – female	**24.4**	24.4	24.3	**24.4**	24.4	24.3
Life expectancy at 65, for future pensioners currently aged 45 – male	**24.3**	24.2	24.2	**24.3**	24.2	24.2
Life expectancy at 65, for future pensioners currently aged 45 – female	**25.3**	25.3	25.3	**25.3**	25.3	25.3
Assumed life expectancy in Mexico (years)						
Life expectancy at 65 for current pensioners – male	**21.3**	21.3	21.3	**21.3**	21.3	21.3
Life expectancy at 65 for current pensioners – female	**23.8**	23.8	23.8	**23.8**	23.8	23.8
Life expectancy at 65, for future pensioners currently aged 45 – male	**21.7**	21.7	21.7	**21.7**	21.7	21.7
Life expectancy at 65, for future pensioners currently aged 45 – female	**24.0**	24.0	24.0	**24.0**	24.0	24.0
Assumed life expectancy in United States (years)						
Life expectancy at 65 for current pensioners – male	**22.7**	22.7	23.0	**22.7**	22.7	23.0
Life expectancy at 65 for current pensioners – female	**24.4**	24.4	24.7	**24.4**	24.4	24.7
Life expectancy at 65, for future pensioners currently aged 45 – male	**24.3**	24.3	23.7	**24.3**	24.3	23.7
Life expectancy at 65, for future pensioners currently aged 45 – female	**25.9**	25.9	25.6	**25.9**	25.9	25.6

(1) The weighted-average rates of increase in future compensation shown for other benefit plans do not include Canadian flexible post-retirement benefits plans established in fiscal 2005, as they are not impacted by future compensation increases.

g) Sensitivity analysis

The sensitivity analysis presented represents the impact of a change in a single assumption with other assumptions left unchanged. For purposes of the sensitivity analysis, the present value of the defined benefit obligation has been calculated using the projected unit credit method at the end of the reporting period, which is the same as that applied in calculating the defined benefit obligation recognized in the statement of financial position.

	Pension plans		Other benefit plans	
For the year ended October 31, 2018 ($ millions)	Benefit obligation	Benefit expense	Benefit obligation	Benefit expense
Impact of the following changes:				
1% decrease in discount rate	**$ 1,383**	**$ 122**	**$ 189**	**$ 13**
0.25% increase in rate of increase in future compensation	**78**	**9**	**1**	**–**
1% increase in health care cost trend rate	**n/a**	**n/a**	**132**	**16**
1% decrease in health care cost trend rate	**n/a**	**n/a**	**(106)**	**(12)**
1 year increase in Canadian life expectancy	**151**	**10**	**20**	**1**
1 year increase in Mexican life expectancy	**2**	**–**	**2**	**–**
1 year increase in the United States life expectancy	**4**	**–**	**4**	**–**

h) Assets

The Bank's principal pension plans' assets are generally invested with the long-term objective of maximizing overall expected returns, at an acceptable level of risk relative to the benefit obligation. A key factor in managing long-term investment risk is asset mix. Investing the pension assets in different asset classes and geographic regions helps to mitigate risk and to minimize the impact of declines in any single asset class, particular region or type of investment. Investment managers – including related-party managers – are typically hired and assigned specific mandates within each asset class.

Pension plan asset mix guidelines are set for the long term, and are documented in each plan's investment policy. Asset mix policy typically also reflects the nature of the plan's benefit obligations. Legislation places certain restrictions on asset mix – for example, there are usually limits on concentration in any one investment. Other concentration and quality limits are also set forth in the investment policies. The use of derivatives is generally prohibited without specific authorization; currently, the main use of derivatives is for currency hedging. Asset mix guidelines are reviewed at least once each year, and adjusted, where appropriate, based on market conditions and opportunities. However, large asset class shifts are not common, and typically reflect a change in the pension plan's situation (e.g. plan amendments) and/or in the investment strategy. Actual asset mix is reviewed regularly, and rebalancing back to target asset mix is considered – as needed – generally on a semi-annual basis. The Bank's other benefit plans are generally not funded, with the exception of certain programs in Canada and Mexico.

The tables below shows the weighted-average actual and target asset allocations for the Bank's principal plans at October 31, by asset category.

	Pension plans			Other benefit plans		
Asset category %	Actual **2018**	Actual 2017	Actual 2016	Actual **2018**	Actual 2017	Actual 2016
Cash and cash equivalents	**4%**	2%	2%	**1%**	1%	2%
Equity investments						
Quoted in an active market	**36%**	43%	44%	**42%**	46%	45%
Non quoted	**12%**	16%	16%	**2%**	–%	–%
	48%	59%	60%	**44%**	46%	45%
Fixed income investments						
Quoted in an active market	**9%**	5%	4%	**34%**	32%	29%
Non quoted	**29%**	26%	27%	**21%**	21%	24%
	38%	31%	31%	**55%**	53%	53%
Property						
Quoted in an active market	**–%**	–%	–%	**–%**	–%	–%
Non quoted	**1%**	–%	–%	**–%**	–%	–%
	1%	–%	–%	**–%**	–%	–%
Other						
Quoted in an active market	**–%**	–%	1%	**–%**	–%	–%
Non quoted	**9%**	8%	6%	**–%**	–%	–%
	9%	8%	7%	**–%**	–%	–%
Total	**100%**	100%	100%	**100%**	100%	100%

Target asset allocation at October 31, 2018 Asset category %	Pension plans	Other benefit plans
Cash and cash equivalents	**–%**	**2%**
Equity investments	**48%**	**45%**
Fixed income investments	**42%**	**53%**
Property	**2%**	**–%**
Other	**8%**	**–%**
Total	**100%**	**100%**

29 Operating Segments

Scotiabank is a diversified financial services institution that provides a wide range of financial products and services to retail, commercial and corporate customers around the world. The Bank's businesses are grouped into three business lines: Canadian Banking, International Banking and Global Banking and Markets. Other smaller business segments are included in the Other segment. The results of these business segments are based upon the internal financial reporting systems of the Bank. The accounting policies used in these segments are generally consistent with those followed in the preparation of the consolidated financial statements as disclosed in Note 3. Notable accounting measurement differences are:

- tax normalization adjustments related to the gross-up of income from associated corporations. This adjustment normalizes the effective tax rate in the divisions to better present the contribution of the associated companies to the divisional results.
- the grossing up of tax-exempt net interest income and non-interest income to an equivalent before-tax basis for those affected segments.

These differences in measurement enable comparison of net interest income and non-interest income arising from taxable and tax-exempt sources.

Scotiabank's results, and average assets and liabilities, allocated by these operating segments, are as follows:

For the year ended October 31, 2018[1]

Taxable equivalent basis ($ millions)	Canadian Banking	International Banking	Global Banking and Markets	Other[2]	Total
Net interest income[3]	**$ 7,898**	**$ 7,322**	**$ 1,454**	**$ (483)**	**$ 16,191**
Non-interest income[4]	**5,452**	**4,111**	**3,074**	**(53)**	**12,584**
Total revenues	**13,350**	**11,433**	**4,528**	**(536)**	**28,775**
Provision for credit losses	**794**	**1,867**	**(50)**	**–**	**2,611**
Depreciation and amortization	**460**	**304**	**69**	**15**	**848**
Non-interest expenses	**6,194**	**5,807**	**2,164**	**45**	**14,210**
Income tax expense	**1,538**	**706**	**587**	**(449)**	**2,382**
Net income	**$ 4,364**	**$ 2,749**	**$ 1,758**	**$ (147)**	**$ 8,724**
Net income attributable to non-controlling interests in subsidiaries	**–**	**176**	**–**	**–**	**176**
Net income attributable to equity holders of the Bank	**4,364**	**2,573**	**1,758**	**(147)**	**8,548**
Average assets ($ billions)	**342**	**168**	**321**	**115**	**946**
Average liabilities ($ billions)	**254**	**131**	**265**	**232**	**882**

(1) The amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Notes 3 and 4).
(2) Includes all other smaller operating segments and corporate adjustments, such as the elimination of the tax-exempt income gross-up reported in net interest income and non-interest income and provision for income taxes for the year ended October 31, 2018 amounting to $112 to arrive at the amounts reported in the Consolidated Statement of Income, differences in the actual amount of costs incurred and charged to the operating segments.
(3) Interest income is reported net of interest expense as management relies primarily on net interest income as a performance measure.
(4) Includes net income from investments in associated corporations for Canadian Banking – $93; International Banking – $643 and Other – $(177).

For the year ended October 31, 2017

Taxable equivalent basis ($ millions)	Canadian Banking	International Banking	Global Banking and Markets	Other[1]	Total
Net interest income[2]	$ 7,363	$ 6,726	$ 1,336	$ (390)	$ 15,035
Non-interest income[3]	5,488	3,688	3,288	(344)	12,120
Total revenues	12,851	10,414	4,624	(734)	27,155
Provision for credit losses	913	1,294	42	–	2,249
Depreciation and amortization	412	283	55	11	761
Non-interest expenses	6,075	5,381	2,105	308	13,869
Income tax expense	1,387	828	604	(786)	2,033
Net income	$ 4,064	$ 2,628	$ 1,818	$ (267)	$ 8,243
Net income attributable to non-controlling interests in subsidiaries	–	238	–	–	238
Net income attributable to equity holders of the Bank	4,064	2,390	1,818	(267)	8,005
Average assets ($ billions)	323	148	336	106	913
Average liabilities ($ billions)	244	115	267	228	854

(1) Includes all other smaller operating segments and corporate adjustments, such as the elimination of the tax-exempt income gross-up reported in net interest income and non-interest income and provision for income taxes for the year ended October 31, 2017 amounting to $562 to arrive at the amounts reported in the Consolidated Statement of Income, differences in the actual amount of costs incurred and charged to the operating segments.
(2) Interest income is reported net of interest expense as management relies primarily on net interest income as a performance measure.
(3) Includes net income from investments in associated corporations for Canadian Banking – $66; International Banking – $482 and Other – $(141).

For the year ended October 31, 2016 Taxable equivalent basis ($ millions)	Canadian Banking	International Banking	Global Banking and Markets	Other[1]	Total
Net interest income[2]	$ 7,024	$ 6,359	$ 1,293	$ (384)	$ 14,292
Non-interest income[3]	5,164	3,482	3,139	273	12,058
Total revenues	12,188	9,841	4,432	(111)	26,350
Provision for credit losses	832	1,281	249	50	2,412
Depreciation and amortization	340	265	68	11	684
Non-interest expenses	5,984	5,258	1,972	642	13,856
Income tax expense	1,296	707	572	(545)	2,030
Net income	$ 3,736	$ 2,330	$ 1,571	$ (269)	$ 7,368
Net income attributable to non-controlling interests in subsidiaries	–	251	–	–	251
Net income attributable to equity holders of the Bank	3,736	2,079	1,571	(269)	7,117
Average assets ($ billions)	309	143	351	111	914
Average liabilities ($ billions)	232	109	270	247	858

(1) Includes all other smaller operating segments and corporate adjustments, such as the elimination of the tax-exempt income gross-up reported in net interest income and non-interest income and provision for income taxes for the year ended October 31, 2016 amounting to $299 to arrive at the amounts reported in the Consolidated Statement of Income, differences in the actual amount of costs incurred and charged to the operating segments.
(2) Interest income is reported net of interest expense as management relies primarily on net interest income as a performance measure.
(3) Includes net income from investments in associated corporations for Canadian Banking – $78; International Banking – $473 and Other – $(137).

Geographical segmentation

The following table summarizes the Bank's financial results by geographic region. Revenues and expenses which have not been allocated back to specific operating business lines are reflected in corporate adjustments.

For the year ended October 31, 2018 ($ millions)[1][2]	Canada	United States	Mexico	Peru	Chile	Colombia	Other International	Total
Net interest income	**$ 7,823**	**$ 691**	**$ 1,561**	**$ 1,378**	**$ 1,117**	**$ 839**	**$ 2,825**	**$ 16,234**
Non-interest income[2]	**7,040**	**843**	**613**	**662**	**565**	**484**	**2,612**	**12,819**
Total revenues[3]	**14,863**	**1,534**	**2,174**	**2,040**	**1,682**	**1,323**	**5,437**	**29,053**
Provision for credit losses	**802**	**(34)**	**239**	**351**	**498**	**511**	**244**	**2,611**
Non-interest expenses	**7,591**	**701**	**1,196**	**770**	**837**	**723**	**3,148**	**14,966**
Income tax expense	**1,596**	**220**	**76**	**235**	**51**	**39**	**451**	**2,668**
Subtotal	**4,874**	**647**	**663**	**684**	**296**	**50**	**1,594**	**8,808**
Net income attributable to non-controlling interests in subsidiaries	**–**	**–**	**17**	**12**	**28**	**16**	**103**	**176**
Total	**$ 4,874**	**$ 647**	**$ 646**	**$ 672**	**$ 268**	**$ 34**	**$ 1,491**	**$ 8,632**
Corporate adjustments								**(84)**
Net income attributable to equity holders of the Bank								**$ 8,548**
Total average assets ($ billions)	**$ 548**	**$ 119**	**$ 32**	**$ 24**	**$ 33**	**$ 12**	**$ 161**	**$ 929**
Corporate adjustments								**17**
Total average assets, including corporate adjustments								**$ 946**

(1) The amounts for the year ended October 31, 2018 have been prepared in accordance with IFRS 9; prior period amounts have not been restated (refer to Notes 3 and 4).
(2) Includes net income from investments in associated corporations for Canada – $93; Peru – $9 and Other International – $634.
(3) Revenues are attributed to countries based on where services are performed or assets are recorded.

For the year ended October 31, 2017 ($ millions)	Canada	United States	Mexico	Peru	Chile	Colombia	Other International	Total
Net interest income	$ 7,440	$ 460	$ 1,380	$ 1,287	$ 817	$ 710	$ 2,999	$ 15,093
Non-interest income[(1)]	6,924	830	536	635	409	455	2,502	12,291
Total revenues[(2)]	14,364	1,290	1,916	1,922	1,226	1,165	5,501	27,384
Provision for credit losses	906	(14)	193	329	145	337	353	2,249
Non-interest expenses	7,650	606	1,123	762	630	620	3,069	14,460
Income tax expense	1,066	147	125	225	77	71	506	2,217
Subtotal	4,742	551	475	606	374	137	1,573	8,458
Net income attributable to non-controlling interests in subsidiaries	–	–	12	11	53	60	102	238
Total	$ 4,742	$ 551	$ 463	$ 595	$ 321	$ 77	$ 1,471	$ 8,220
Corporate adjustments								(215)
Net income attributable to equity holders of the Bank								$ 8,005
Total average assets ($ billions)	$ 539	$ 111	$ 28	$ 24	$ 23	$ 11	$ 162	$ 898
Corporate adjustments								15
Total average assets, including corporate adjustments								$ 913

(1) Includes net income from investments in associated corporations for Canada – $66; Peru – $6 and Other International – $476.
(2) Revenues are attributed to countries based on where services are performed or assets are recorded.

For the year ended October 31, 2016 ($ millions)	Canada	United States	Mexico	Peru	Chile	Colombia	Other International	Total
Net interest income	$ 7,022	$ 479	$ 1,224	$ 1,231	$ 763	$ 674	$ 2,950	$ 14,343
Non-interest income[(1)]	6,893	871	554	600	325	419	2,409	12,071
Total revenues[(2)]	13,915	1,350	1,778	1,831	1,088	1,093	5,359	26,414
Provision for credit losses	876	112	225	315	113	320	401	2,362
Non-interest expenses	7,339	633	1,121	740	605	550	3,036	14,024
Income tax expense	1,235	155	69	201	45	89	497	2,291
Subtotal	4,465	450	363	575	325	134	1,425	7,737
Net income attributable to non-controlling interests in subsidiaries	–	–	9	12	38	93	99	251
Total	$ 4,465	$ 450	$ 354	$ 563	$ 287	$ 41	$ 1,326	$ 7,486
Corporate adjustments								(369)
Net income attributable to equity holders of the Bank								$ 7,117
Total average assets ($ billions)	$ 529	$ 126	$ 27	$ 23	$ 20	$ 10	$ 165	$ 900
Corporate adjustments								14
Total average assets, including corporate adjustments								$ 914

(1) Includes net income from investments in associated corporations for Canada – $78; Peru – $5 and Other International – $468.
(2) Revenues are attributed to countries based on where services are performed or assets are recorded.

30 Related Party Transactions

Compensation of key management personnel of the Bank

Key management personnel are those persons having authority and responsibility for planning, directing and controlling the activities of the Bank, directly or indirectly, and comprise the directors of the Bank, the President and Chief Executive Officer, certain direct reports of the President and Chief Executive Officer and Group Heads.

For the year ended October 31 ($ millions)	2018	2017
Salaries and cash incentives[(1)]	**$ 18**	$ 17
Equity-based payment[(2)]	**27**	25
Pension and other benefits[(1)]	**4**	3
Total	**$ 49**	$ 45

(1) Expensed during the year.
(2) Awarded during the year.

Directors can use some or all of their director fees earned to buy common shares of the Bank at market rates through the Director's Share Purchase Plan. Non-officer directors may elect to receive all or a portion of their fees in the form of deferred stock units which vest immediately. Refer to Note 26 for further details of these plans.

Loans and deposits of key management personnel

As at October 31 ($ millions)	2018	2017
Loans	**$ 13**	$ 6
Deposits	**$ 6**	$ 8

The Bank's committed credit exposure to companies controlled by directors totaled $132.4 million as at October 31, 2018 (2017 – $145.2 million), while actual utilized amounts were $23.9 million (2017 – $11.5 million).

Transactions with associates and joint ventures

In the ordinary course of business, the Bank provides normal banking services and enters into transactions with its associated and other related corporations on terms similar to those offered to non-related parties. If these transactions are eliminated on consolidation, they are not disclosed as related party transactions. Transactions between the Bank and its associated companies and joint ventures also qualify as related party transactions and were recorded as follows:

As at and for the year ended October 31 ($ millions)	2018	2017	2016
Net income / (loss)	**$ (64)**	$ (46)	$ (45)
Loans	**702**	703	788
Deposits	**151**	217	338
Guarantees and commitments	**123**	114	99

Scotiabank principal pension plan

The Bank manages assets of $3.8 billion (2017 – $3.0 billion) which is a portion of the Scotiabank principal pension plan assets and earned $5.0 million (2017 – $3.7 million) in fees.

31 Principal Subsidiaries and Non-Controlling Interests in Subsidiaries

(a) Principal subsidiaries[1]

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

As at October 31 ($ millions)	Principal office	Carrying value of shares 2018	Carrying value of shares 2017
Canadian			
1832 Asset Management L.P.	Toronto, Ontario	**$ 1,524**	$ 2,006
BNS Investments Inc.	Toronto, Ontario	**13,870**	13,551
Montreal Trust Company of Canada	Montreal, Quebec		
National Trust Company[2]	Stratford, Ontario	**415**	449
Roynat Inc.	Calgary, Alberta	**432**	239
Scotia Capital Inc.	Toronto, Ontario	**1,391**	1,024
Scotia Dealer Advantage Inc.	Burnaby, British Columbia	**592**	567
Scotia Life Insurance Company	Toronto, Ontario	**219**	189
Scotia Mortgage Corporation	Toronto, Ontario	**588**	615
Scotia Securities Inc.	Toronto, Ontario	**40**	34
Tangerine Bank	Toronto, Ontario	**3,525**	3,488
Jarislowsky, Fraser Limited	Montreal, Quebec	**947**	–
MD Financial Management Inc.	Ottawa, Ontario	**2,612**	–
International			
Scotiabank Colpatria S.A. (formerly Banco Colpatria Multibanca Colpatria S.A.) (51%)[3]	Bogota, Colombia	**1,221**	1,160
The Bank of Nova Scotia Berhad	Kuala Lumpur, Malaysia	**318**	303
The Bank of Nova Scotia International Limited	Nassau, Bahamas	**19,312**	18,223
BNS Asia Limited	Singapore		
The Bank of Nova Scotia Trust Company (Bahamas) Limited	Nassau, Bahamas		
Grupo BNS de Costa Rica, S.A.	San Jose, Costa Rica		
Scotiabank & Trust (Cayman) Ltd.	Grand Cayman, Cayman Islands		
Scotiabank (Bahamas) Limited	Nassau, Bahamas		
Scotiabank (British Virgin Islands) Limited	Road Town, Tortola, B.V.I.		
Scotiabank (Hong Kong) Limited	Hong Kong, China		
Scotiabank (Ireland) Designated Activity Company	Dublin, Ireland		
Scotiabank (Turks and Caicos) Ltd.	Providenciales, Turks and Caicos Islands		
BNS International (Panama) S.A.	Panama City, Panama		
Grupo Financiero Scotiabank Inverlat, S.A. de C.V. (97.4%)	Mexico City, Mexico	**3,901**	3,544
Nova Scotia Inversiones Limitada	Santiago, Chile	**5,100**	3,325
Scotiabank Chile S.A. (75.5%)	Santiago, Chile		
Scotia Holdings (US) Inc.[4]	New York, New York		
Scotiabanc Inc.	Houston, Texas		
Scotia Capital (USA) Inc.[4][5]	New York, New York		
Scotia International Limited	Nassau, Bahamas	**635**	642
Scotiabank Anguilla Limited	The Valley, Anguilla		
Scotiabank Brasil S.A. Banco Multiplo	Sao Paulo, Brazil	**386**	223
Scotiabank Caribbean Holdings Ltd.	Bridgetown, Barbados	**1,847**	1,710
Scotia Group Jamaica Limited (71.8%)	Kingston, Jamaica		
The Bank of Nova Scotia Jamaica Limited	Kingston, Jamaica		
Scotia Investments Jamaica Limited	Kingston, Jamaica		
Scotiabank (Belize) Ltd.	Belize City, Belize		
Scotiabank Trinidad and Tobago Limited (50.9%)	Port of Spain, Trinidad and Tobago		
Scotiabank (Panama) S.A.	Panama City, Panama		
Scotiabank Uruguay S.A.	Montevideo, Uruguay	**490**	496
Scotiabank de Puerto Rico	San Juan, Puerto Rico	**1,555**	1,395
Scotiabank El Salvador, S.A. (99.6%)	San Salvador, El Salvador	**686**	659
Scotiabank Europe plc	London, United Kingdom	**2,432**	2,400
Scotiabank Peru S.A.A. (98.05%)	Lima, Peru	**4,877**	4,518

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

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

(b) Non-controlling interests in subsidiaries

The Bank's significant non-controlling interests in subsidiaries are comprised of the following entities:

	As at and for the year ended				
	2018			2017	
	Non-controlling interest %	Non-controlling interests in subsidiaries	Dividends paid to non-controlling interest	Non-controlling interests in subsidiaries	Dividends paid to non-controlling interest
Scotiabank Chile S.A.[(1)]	**24.5%**	**$ 917**	**$ 115**	$ 191	$ 14
Scotiabank Colpatria S.A. (formerly Banco Colpatria Multibanca Colpatria S.A.) (51%)[(2)]	**49.0%**	**519**	**–**	445	38
Scotia Group Jamaica Limited	**28.2%**	**340**	**17**	300	17
Scotiabank Trinidad and Tobago Limited	**49.1%**	**365**	**49**	354	56
Other	**0.1% - 49.0%[(3)]**	**311**	**18**	302	8
Total		**$ 2,452**	**$ 199**	$ 1,592	$ 133

(1) Non-controlling interest holders for Scotiabank Chile S.A. have a right to sell their holding to the Bank at fair market value that can be settled at the Bank's discretion, by issuance of common shares or cash.
(2) Non-controlling interest holders for Scotiabank Colpatria S.A. have a right to sell their holding to the Bank after the end of 7th anniversary (January 17, 2019) and at subsequent pre-agreed intervals, into the future, at fair market value that can be settled at the Bank's discretion, by issuance of common shares or cash.
(3) Range of non-controlling interest % for other subsidiaries.

Summarized financial information of the Bank's subsidiaries with significant non-controlling interests are as follows:

	As at and for the year ended October 31, 2018				As at and for the year ended October 31, 2017			
($ millions)	Revenue	Total comprehensive income	Total assets	Total liabilities	Revenue	Total comprehensive income	Total assets	Total liabilities
Total	**$ 3,615**	**$ 173**	**$ 80,352**	**$ 73,449**	$ 2,978	$ 567	$ 49,077	$ 42,943

32 Interest Income and Expense

The following table presents details of interest income from financial assets.

For the year ended October 31 ($ millions)	2018
Loans at amortized cost[(1)]	**$ 24,991**
Securities	
Amortized cost[(1)]	**353**
FVOCI[(1)]	**1,205**
Other	**213**
Securities purchased under resale agreements and securities borrowed not at FVTPL[(1)]	**446**
Deposit with financial institutions[(1)]	**859**
Interest income	**$ 28,067**

(1) The interest income on the financial assets measured at amortized cost and FVOCI is calculated using the effective interest method.

The following table presents details of interest expense from financial liabilities.

For the year ended October 31 ($ millions)	2018
Deposits	
Amortized cost[(1)]	**$ 10,460**
FVTPL	**84**
Subordinated debentures[(1)]	**214**
Other	
Amortized cost[(1)]	**1,084**
FVTPL	**34**
Interest expense	**$ 11,876**

(1) The interest expense on the financial liabilities measured at amortized cost is calculated using the effective interest method.

33 Non-Interest Income

The following table presents details of banking revenues and wealth management revenues in non-interest income.

For the year ended October 31 ($ millions)	2018	2017	2016
Banking			
Card revenues	**$ 1,656**	$ 1,514	$ 1,359
Deposit and payment services	**1,366**	1,324	1,279
Credit fees	**1,191**	1,153	1,154
Other	**466**	472	436
	4,679	4,463	4,228
Banking fee related expenses	**678**	608	559
Total banking	**$ 4,001**	$ 3,855	$ 3,669
Wealth management			
Mutual funds	**$ 1,714**	$ 1,639	$ 1,624
Brokerage fees[1]	**895**	1,047	1,034
Investment management and trust[1]	**732**	632	624
Total wealth management	**$ 3,341**	$ 3,318	$ 3,282

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

34 Trading Revenues

The following table presents details of trading revenues.

For the year ended October 31 ($ millions)	2018	2017[1]	2016[1]
Interest rate and credit	**$ 272**	$ 474	$ 559
Equities	**441**	(125)	(20)
Commodities	**231**	295	376
Foreign exchange	**295**	250	262
Other	**181**	92	51
Total	**$ 1,420**	$ 986	$ 1,228

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

35 Earnings Per Share

For the year ended October 31 ($ millions)	2018	2017	2016
Basic earnings per common share			
Net income attributable to common shareholders	**$ 8,361**	$ 7,876	$ 6,987
Weighted average number of common shares outstanding (millions)	**1,213**	1,203	1,204
Basic earnings per common share[1] (in dollars)	**$ 6.90**	$ 6.55	$ 5.80
Diluted earnings per common share			
Net income attributable to common shareholders	**$ 8,361**	$ 7,876	$ 6,987
Dilutive impact of share-based payment options and others[2]	**16**	59	83
Net income attributable to common shareholders (diluted)	**$ 8,377**	$ 7,935	$ 7,070
Weighted average number of common shares outstanding (millions)	**1,213**	1,203	1,204
Dilutive impact of share-based payment options and others[2] (millions)	**16**	20	22
Weighted average number of diluted common shares outstanding (millions)	**1,229**	1,223	1,226
Diluted earnings per common share[1] (in dollars)	**$ 6.82**	$ 6.49	$ 5.77

(1) Earnings per share calculations are based on full dollar and share amounts.
(2) Certain tandem stock appreciation rights or options as well as acquisition related put/call options that the Bank may settle at its own discretion by issuing common shares were not included in the calculation of diluted earnings per share as they were anti-dilutive.

36 Guarantees, Commitments and Pledged Assets

(a) Guarantees

The Bank enters into various types of guarantees and indemnifications in the normal course of business. Guarantees represent an undertaking to another party to make a payment to that party when certain specified events occur. The various guarantees and indemnifications that the Bank provides with respect to its customers and other third parties are presented below:

	2018	2017
As at October 31 ($ millions)	Maximum potential amount of future payments[(1)]	Maximum potential amount of future payments[(1)]
Standby letters of credit and letters of guarantee	**$ 35,376**	$ 35,523
Liquidity facilities	**4,043**	4,996
Derivative instruments	**6,969**	5,398
Indemnifications	**571**	587

(1) The maximum potential amount of future payments represents those guarantees that can be quantified and excludes other guarantees that cannot be quantified. As many of these guarantees will not be drawn upon and the maximum potential amount of future payments listed above does not consider the possibility of recovery under recourse or collateral provisions, the above amounts are not indicative of future cash requirements, credit risk, or the Bank's expected losses from these arrangements.

(i) Standby letters of credit and letters of guarantee

Standby letters of credit and letters of guarantee are irrevocable undertakings by the Bank on behalf of a customer, to make payments to a third party in the event that the customer is unable to meet its obligations to the third party. Generally, the term of these guarantees does not exceed four years. The types and amounts of collateral security held by the Bank for these guarantees is generally the same as for loans. As at October 31, 2018, $4 million (2017 – $4 million) was included in other liabilities in the Consolidated Statement of Financial Position with respect to these guarantees.

(ii) Liquidity facilities

The Bank's backstop liquidity facilities are committed liquidity and provided to asset-backed commercial paper conduits, administered by the Bank. These facilities generally provide an alternative source of financing in the event market disruption prevents the conduit from issuing commercial paper or, in some cases, when certain specified conditions or performance measures are not met. These facilities generally have a term of up to three years.

(iii) Derivative instruments

The Bank enters into written credit derivative contracts under which a counterparty is compensated for losses on a specified referenced asset, typically a loan or bond, if certain events occur. The Bank also enters into written option contracts under which a counterparty is granted the right, but not the obligation, to sell a specified quantity of a financial instrument at a pre-determined price on or before a set date. These written option contracts are normally referenced to interest rates, foreign exchange rates, commodity prices or equity prices. Typically, a corporate or government entity is the counterparty to the written credit derivative and option contracts that meet the characteristics of guarantees described above. The maximum potential amount of future payments disclosed in the table above relates to written credit derivatives, puts and floors. However, these amounts exclude certain derivatives contracts, such as written caps, as the nature of these contracts prevents quantification of the maximum potential amount of future payments. As at October 31, 2018, $377 million (2017 – $274 million) was included in derivative instrument liabilities in the Consolidated Statement of Financial Position with respect to these derivative instruments.

(iv) Indemnifications

In the ordinary course of business, the Bank enters into many contracts which contain indemnification provisions, such as purchase contracts, service agreements, trademark licensing agreements, director / officer contracts, escrow arrangements, sales of assets or businesses, outsourcing agreements, leasing arrangements, clearing system arrangements, securities lending agency agreements and structured transactions. The Bank cannot estimate the maximum potential future amount that may be payable. The Bank has not made any significant payments under such indemnifications. Historically, the Bank has not made any significant payments under these indemnities. As at October 31, 2018, $2 million (2017 – $2 million) was included in other liabilities in the Consolidated Statement of Financial Position with respect to indemnifications.

(b) Other indirect commitments

In the normal course of business, various other indirect commitments are outstanding which are not reflected on the Consolidated Statement of Financial Position. These may include:

- Commercial letters of credit which require the Bank to honour drafts presented by a third-party when specific activities are completed;
- Commitments to extend credit which represent undertakings to make credit available in the form of loans or other financings for specific amounts and maturities, subject to specific conditions;
- Securities lending transactions under which the Bank, acting as principal or agent, agrees to lend securities to a borrower. The borrower must fully collateralize the security loan at all times. The market value of the collateral is monitored relative to the amounts due under the agreements, and where necessary, additional collateral is obtained; and
- Security purchase commitments which require the Bank to fund future investments.

These financial instruments are subject to normal credit standards, financial controls and monitoring procedures.

The table below provides a detailed breakdown of the Bank's other indirect commitments expressed in terms of the contractual amounts of the related commitment or contract which are not reflected on the Consolidated Statement of Financial Position.

As at October 31 ($ millions)	2018	2017
Commercial letters of credit	$ 1,046	$ 821
Commitments to extend credit[1]		
Original term to maturity of one year or less	75,033	57,321
Original term to maturity of more than one year	122,407	128,345
Securities lending	51,723	40,535
Securities purchase and other commitments	888	614
Total	$ 251,097	$ 227,636

(1) Includes liquidity facilities.

(c) Lease commitments

Operating lease commitments

The Bank leases various offices, branches and other premises under non-cancellable operating lease arrangements. The leases have various terms, escalation and renewal rights. There are no contingent rents payable. The Bank also leases equipment under non-cancellable lease arrangements. Where the Bank is the lessee, the future minimum lease payment under non-cancellable operating leases are as follows:

As at October 31 ($ millions)	2018	2017
Within one year	$ 420	$ 349
After one year but not more than five years	1,196	967
More than five years	880	593
Total	$ 2,496	$ 1,909

Building rent expense, included in premises and technology expense in the Consolidated Statement of Income, was $477 million (2017 – $444 million).

(d) Assets pledged and repurchase agreements

In the ordinary course of business, securities and other assets are pledged against liabilities. As well, securities are sold under repurchase agreements. The carrying value of pledged assets and details of related activities are shown below.

As at October 31 ($ millions)	2018	2017
Assets pledged to:		
Bank of Canada[1]	$ 118	$ 25
Foreign governments and central banks[1]	3,147	2,653
Clearing systems, payment systems and depositories[1]	1,629	1,195
Assets pledged in relation to exchange-traded derivative transactions	3,127	2,181
Assets pledged in relation to over-the-counter derivative transactions	7,246	8,126
Assets pledged as collateral related to securities borrowing and lending	128,383	115,987
Assets pledged in relation to covered bond program (Note 15)	30,725	27,806
Assets pledged in relation to other securitization programs (Note 15)	6,085	4,801
Assets pledged under CMHC programs (Note 14)	23,178	20,471
Other	963	643
Total assets pledged	$ 204,601	$ 183,888
Obligations related to securities sold under repurchase agreements	82,816	86,789
Total[2]	$ 287,417	$ 270,677

(1) Includes assets pledged in order to participate in clearing and payment systems and depositories, or pledged to have access to the facilities of central banks in foreign jurisdictions.
(2) Includes assets that have been received from counterparties through normal course of business in securities financing and derivative transactions.

(e) Other executory contracts

Effective July 2018, the Bank has entered into an $800 million contract for naming rights of an arena for 20 years.

The Bank and its subsidiaries have also entered into other long-term executory contracts, relating to outsourced services. The significant outsourcing arrangements have variable pricing based on utilization and are cancellable with notice.

37 Financial Instruments – Risk Management

The Bank's principal business activities result in a balance sheet that consists primarily of financial instruments. In addition, the Bank uses derivative financial instruments for both trading and hedging purposes. The principal financial risks that arise from transacting financial instruments include credit risk, liquidity risk and market risk. The Bank's framework to monitor, evaluate and manage these risks is consistent with that in place as at October 31, 2018:

- extensive risk management policies define the Bank's risk appetite, set the limits and controls within which the Bank and its subsidiaries can operate, and reflect the requirements of regulatory authorities. These policies are approved by the Bank's Board of Directors, either directly or through the Risk Committee of the Board, (the Board);
- guidelines are developed to clarify risk limits and conditions under which the Bank's risk policies are implemented;
- processes are implemented to identify, evaluate, document, report and control risk. Standards define the breadth and quality of information required to make a decision; and
- compliance with risk policies, limits and guidelines is measured, monitored and reported to ensure consistency against defined goals.

Further details on the fair value of financial instruments and how these amounts were determined are provided in Note 7. Note 10 provides details on the terms and conditions of the Bank's derivative financial instruments including notional amounts, remaining term to maturity, credit risk, and fair values of derivatives used in trading and hedging activities.

(a) Credit risk

Credit risk is the risk of loss resulting from the failure of a borrower or counterparty to honour its financial or contractual obligations to the Bank. The Bank's Credit Risk Appetite and Credit Risk Policy are developed by its Global Risk Management (GRM) department and limits are reviewed and approved by the Board on an annual and biennial basis, respectively. The Credit Risk Appetite defines target markets and risk tolerances that are developed at an all-Bank level, and then further refined at the business line level. The objectives of the Credit Risk Appetite are to ensure that, for the Bank, including the individual business lines:

- target markets and product offerings are well defined;
- the risk parameters for new underwritings and for the portfolios as a whole are clearly specified; and
- transactions, including origination, syndication, loan sales and hedging, are managed in a manner to ensure the goals for the overall portfolio are met.

The Credit Risk Policy sets out, among other things, the credit risk rating systems and associated parameter estimates, the delegation of authority for granting credit, and the calculation of allowance for credit losses. It forms an integral part of enterprise-wide policies and procedures that encompass governance, risk management and control structure.

The Bank's credit risk rating systems are designed to support the determination of key credit risk parameter estimates which measure credit and transaction risk. For non-retail exposures, parameters are associated with each credit facility through the assignment of borrower and transaction ratings. Borrower risk is evaluated using methodologies that are specific to particular industry sectors and/or business lines. The risk associated with facilities of a given borrower is assessed by considering the facilities' structural and collateral-related elements. For retail portfolios, product specific models assign accounts into homogeneous segments using internal and external borrower/facility-level credit experience. This process provides for a meaningful differentiation of risk, and allows for appropriate and consistent estimation of loss characteristics at the model and segment level. Further details on credit risk relating to derivatives are provided in Note 10(c).

(i) Credit risk exposures

Credit risk exposures disclosed below are presented based on the Basel framework utilized by the Bank i.e. exposures subject to credit risk capital. The Bank uses the Advanced Internal Ratings Based approach (AIRB) for all material Canadian, U.S., European portfolios, and effective 2011 for a significant portion of all international corporate and commercial portfolios. The remaining portfolios, including other individual portfolios, are treated under the standardized approach. Under the AIRB approach, the Bank uses internal risk parameter estimates, based on historical experience, for probability of default (PD), loss given default (LGD) and exposure at default (EAD), as defined below:

- EAD: Generally represents the expected gross exposure – outstanding amount for on-balance sheet exposure and loan equivalent amount for off-balance sheet exposure.
- PD: Measures the likelihood that a borrower will default within a 1-year time horizon, expressed as a percentage.
- LGD: Measures the severity of loss on a facility in the event of a borrower's default, expressed as a percentage of exposure at default.

Under the standardized approach, credit risk is estimated using the risk weights as prescribed by the Basel framework either based on credit assessments by external rating agencies or based on the counterparty type for non-retail exposures and product type for retail exposures. Standardized risk weights also takes into account other factors such as specific provisions for defaulted exposures, eligible collateral, and loan-to-value for real estate secured retail exposures.

As at October 31 ($ millions)	2018				2017
	Exposure at default[(1)]				
Category	Drawn[(2)]	Undrawn commitments	Other exposures[(3)]	Total	Total
By counterparty type					
Non-retail					
AIRB portfolio					
Corporate	$ 146,324	$ 83,885	$ 77,751	$ 307,960	$ 285,191
Bank	22,680	2,146	16,676	41,502	40,903
Sovereign	188,480	768	6,854	196,102	195,429
	357,484	86,799	101,281	545,564	521,523
Standardized portfolio					
Corporate	59,018	5,313	3,802	68,133	59,164
Bank	3,208	160	143	3,511	2,619
Sovereign	5,299	31	6	5,336	6,337
	67,525	5,504	3,951	76,980	68,120
Total non-retail	$ 425,009	$ 92,303	$ 105,232	$ 622,544	$ 589,643
Retail					
AIRB portfolio					
Real estate secured	143,475	17,864	–	161,339	143,160
Qualifying revolving	17,337	28,550	–	45,887	44,384
Other retail	31,176	1,671	–	32,847	31,672
	$ 191,988	$ 48,085	$ –	$ 240,073	$ 219,216
Standardized portfolio					
Real estate secured	44,517	–	–	44,517	34,002
Other retail	42,100	–	–	42,100	35,552
	86,617	–	–	86,617	69,554
Total retail	$ 278,605	$ 48,085	$ –	$ 326,690	$ 288,770
Total	$ 703,614	$ 140,388	$ 105,232	$ 949,234	$ 878,413
By geography[(4)]					
Canada	$ 394,279	$ 89,776	$ 37,748	$ 521,803	$ 502,224
United States	102,265	33,103	42,771	178,139	157,386
Chile	47,048	1,038	5,066	53,152	27,190
Mexico	29,344	1,339	2,611	33,294	30,528
Peru	23,997	1,506	2,992	28,495	28,733
Colombia	12,729	486	434	13,649	10,859
Other International					
Europe	25,357	7,041	10,215	42,613	43,030
Caribbean	35,716	1,676	910	38,302	39,358
Latin America (other)	10,232	909	227	11,368	9,035
All other	22,647	3,514	2,258	28,419	30,070
Total	$ 703,614	$ 140,388	$ 105,232	$ 949,234	$ 878,413

(1) Exposure at default is presented after credit risk mitigation. Exposures exclude equity securities and other assets.
(2) Non-retail drawn includes loans, acceptances, deposits with financial institutions and FVOCI debt securities. Retail drawn includes residential mortgages, credit cards, lines of credit, and other personal loans.
(3) Non-retail other exposures include off-balance sheet lending instruments such as letters of credit, letters of guarantees, securitizations including nil first loss protection (2017 – nil), derivatives and repo-style transactions (reverse repurchase agreements, repurchase agreements, securities lending and securities borrowing), net of related collateral. Not applicable for retail exposures.
(4) Geographic segmentation is based upon the location of the ultimate risk of the credit exposure.

Consolidated Statement of Financial Position asset categories cross-referenced to credit risk exposures

The table below provides mapping of on-balance sheet asset categories that are included in the various Basel III exposure categories as presented in the credit risk exposure summary table of these consolidated financial statements. In addition, it also provides other exposures which are subject to market risk and/or other assets which are not subject to market and credit risk with a reconciliation to the Consolidated Statement of Financial Position. The credit risk exposures on certain assets such as cash, precious metals, investment securities (equities) and other assets are not included on the credit risk exposure summary table. Also excluded from the credit risk exposures are certain trading assets and all assets of the Bank's insurance subsidiaries.

	Credit Risk Exposures						Other Exposures			
	Drawn		Other Exposures				Market Risk Exposures			
As at October 31, 2018 ($ millions)	Non-retail	Retail	Securitization	Repo-style Transactions	OTC Derivatives	Equity	Also subject to Credit Risk		All Other[1]	Total
Cash and deposits with financial institutions	$ 58,728	$ –	$ –	$ –	$ –	$ –	$ –	$ –	$ 3,541	$ 62,269
Precious metals	–	–	–	–	–	–	–	3,191	–	3,191
Trading assets										
Securities	24	–	–	–	–	–	–	85,450	–	85,474
Loans	7,183	12	–	–	–	–	6,606	7,139	–	14,334
Other	–	–	–	–	–	–	–	454	–	454
Financial assets designated at fair value through profit or loss	12	–	–	–	–	–	–	–	–	12
Securities purchased under resale agreements and securities borrowed	–	–	–	104,010	–	–	–	–	8	104,018
Derivative financial instruments	–	–	–	–	37,558	–	33,937	–	–	37,558
Investment securities	75,837	–	–	–	–	1,754	–	–	805	78,396
Loans:										
Residential mortgages[2]	86,417	166,752	–	–	–	–	–	–	188	253,357
Personal loans	–	94,392	1,613	–	–	–	–	–	14	96,019
Credit cards	–	14,331	687	–	–	–	–	–	1,467	16,485
Business & government	180,164	3,193	7,748	–	–	–	–	–	(67)	191,038
Allowances for credit losses[3]	(560)	(786)	–	–	–	–	–	–	(3,719)	(5,065)
Customers' liability under acceptances	16,338	–	–	–	–	–	–	–	(9)	16,329
Property and equipment	–	–	–	–	–	–	–	–	2,684	2,684
Investment in associates	–	–	–	–	–	–	–	–	4,850	4,850
Goodwill and other intangibles assets	–	–	–	–	–	–	–	–	17,719	17,719
Other (including Deferred tax assets)	866	711	–	–	–	–	–	–	17,794	19,371
Total	$ 425,009	$ 278,605	$ 10,048	$ 104,010	$ 37,558	$ 1,754	$ 40,543	$ 96,234	$ 45,275	$ 998,493

(1) Includes the Bank's insurance subsidiaries' assets and all other assets which are not subject to credit and market risks.
(2) Includes $82.2 billion in mortgages guaranteed by Canada Mortgage Housing Corporation including 90% of privately insured mortgages.
(3) Amounts for AIRB exposures are reported gross of allowances and amounts for standardized exposures are reported net of allowances.

	Credit Risk Exposures						Other Exposures			
	Drawn		Other Exposures				Market Risk Exposures			
As at October 31, 2017 ($ millions)	Non-retail	Retail	Securitization	Repo-style Transactions	OTC Derivatives	Equity	Also subject to Credit Risk		All Other[1]	Total
Cash and deposits with financial institutions	$ 57,104	$ –	$ –	$ –	$ –	$ –	$ –	$ –	$ 2,559	$ 59,663
Precious metals	–	–	–	–	–	–	–	5,717	–	5,717
Trading assets										
Securities	–	–	–	–	–	–	–	78,652	–	78,652
Loans	9,087	–	–	–	–	–	9,087	8,225	–	17,312
Other	–	–	–	–	–	–	–	2,500	–	2,500
Financial assets designated at fair value through profit or loss	13	–	–	–	–	–	–	–	–	13
Securities purchased under resale agreements and securities borrowed	–	–	–	95,319	–	–	–	–	–	95,319
Derivative financial instruments	–	–	–	–	35,364	–	30,648	–	–	35,364
Investment securities	67,255	–	–	–	–	1,281	–	–	733	69,269
Loans:										
Residential mortgages[2]	95,692	141,066	–	–	–	–	–	–	158	236,916
Personal loans[3]	–	87,892	1,314	–	–	–	–	–	21	89,227
Credit cards[3]	–	12,289	724	–	–	–	–	–	1,091	14,104
Business & government	158,510	2,878	7,032	–	–	–	–	–	29	168,449
Allowances for credit losses[4]	(649)	–	–	–	–	–	–	–	(3,678)	(4,327)
Customers' liability under acceptances	13,560	–	–	–	–	–	–	–	–	13,560
Property and equipment	–	–	–	–	–	–	–	–	2,381	2,381
Investment in associates	–	–	–	–	–	–	–	–	4,586	4,586
Goodwill and other intangibles assets	–	–	–	–	–	–	–	–	12,106	12,106
Other (including Deferred tax assets)	1,805	545	–	–	–	–	–	–	12,112	14,462
Total	$ 402,377	$ 244,670	$ 9,070	$ 95,319	$ 35,364	$ 1,281	$ 39,735	$ 95,094	$ 32,098	$ 915,273

(1) Includes the Bank's insurance subsidiaries' assets and all other assets which are not subject to credit and market risks.
(2) Includes $91.7 billion in mortgages guaranteed by Canada Mortgage Housing Corporation including 90% of privately insured mortgages.
(3) Restated to reflect the current period presentation.
(4) Amounts for AIRB exposures are reported gross of allowances and amounts for standardized exposures are reported net of allowances.

(ii) Credit quality of non-retail exposures

Credit decisions are made based upon an assessment of the credit risk of the individual borrower or counterparty. Key factors considered in the assessment include: the borrower's management; the borrower's current and projected financial results and credit statistics; the industry in which the borrower operates; economic trends; and geopolitical risk. Banking units and Global Risk Management also review the credit quality of the credit portfolio across the organization on a regular basis to assess whether economic trends or specific events may affect the performance of the portfolio.

The Bank's non-retail portfolio is well diversified by industry. As at October 31, 2018, and October 31, 2017, a significant portion of the authorized corporate and commercial lending portfolio was internally assessed at a grade that would generally equate to an investment grade rating by external rating agencies. There has not been a significant change in concentrations of credit risk since October 31, 2017.

Internal grades (IG) are used to differentiate the risk of default of a borrower. The following table cross references the Bank's internal borrower grades with equivalent ratings categories utilized by external rating agencies:

Cross referencing of internal ratings to external ratings(1)

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

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

Non-retail AIRB portfolio

The credit quality of the non-retail AIRB portfolio, expressed in terms of risk categories of borrower internal grades is shown in the table below:

		2018				2017
		Exposure at Default(1)				
As at October 31 ($ millions) Category of internal grades	IG Code	Drawn	Undrawn commitments	Other exposures(2)	Total	Total
Investment grade	**99 – 98**	**$ 77,598**	**$ 2,758**	**$ 17,456**	**$ 97,812**	$ 91,159
	95	**35,694**	**9,315**	**19,661**	**64,670**	53,618
	90	**25,281**	**15,394**	**25,234**	**65,909**	61,508
	87	**21,318**	**13,714**	**12,513**	**47,545**	44,533
	85	**21,472**	**12,861**	**9,992**	**44,325**	40,478
	83	**22,544**	**13,230**	**7,054**	**42,828**	41,600
Non-Investment grade	**80**	**26,618**	**10,019**	**2,993**	**39,630**	36,235
	77	**20,005**	**4,944**	**1,945**	**26,894**	23,058
	75	**13,267**	**2,717**	**3,296**	**19,280**	20,418
	73	**5,905**	**1,049**	**566**	**7,520**	7,271
	70	**2,157**	**432**	**228**	**2,817**	3,758
Watch list	**65**	**892**	**105**	**146**	**1,143**	2,167
	60	**936**	**90**	**78**	**1,104**	761
	40	**526**	**41**	**9**	**576**	1,311
	30	**141**	**–**	**–**	**141**	159
Default	**21**	**938**	**130**	**110**	**1,178**	1,752
Total		**$ 275,292**	**$ 86,799**	**$ 101,281**	**$ 463,372**	$ 429,786
Government guaranteed residential mortgages(3)		**82,192**	**–**	**–**	**82,192**	91,737
Total		**$ 357,484**	**$ 86,799**	**$ 101,281**	**$ 545,564**	$ 521,523

(1) After credit risk mitigation.
(2) Includes off-balance sheet lending instruments such as letters of credit, letters of guarantee, securitizations, excluding nil first loss protection (2017 – nil), derivatives and repo-style transactions (reverse repurchase agreements, repurchase agreements and securities lending and borrowing), net of related collateral.
(3) These exposures are classified as sovereign exposures and are included in the non-retail category.

Non-retail standardized portfolio

The non-retail standardized portfolio relies on external credit ratings (e.g. S&P, Moody's, DBRS, etc.,) of the borrower, if available, to compute regulatory capital for credit risk. Exposures are risk-weight based on prescribed percentages and a mapping process as defined within OSFI's Capital Adequacy Requirements Guideline. Non-retail standardized portfolio as at October 31, 2018 comprised of drawn, undrawn and other exposures to corporate, bank and sovereign counterparties amounted to $77 billion (October 31, 2017 – $68 billion). Within this portfolio, the majority of Corporate/Commercial exposures are to unrated counterparties, mainly in the Caribbean and Latin American region.

(iii) Credit quality of retail exposures

The Bank's retail portfolios consist of a number of relatively small loans to a large number of borrowers. The portfolios are distributed across Canada and a wide range of countries. As such, the portfolios inherently have a high degree of diversification. In addition, as of October 31, 2018, 43% of the Canadian banking residential mortgage portfolio is insured and the average loan-to-value ratio of the uninsured portion of the portfolio is 54%.

Retail AIRB portfolio

The data in the table below provides a distribution of the retail AIRB exposure within each PD range by asset class:

As at October 31 ($ millions)		2018					2017
		Exposure at default[1]					
		Real estate secured					
Category of (PD) grades	PD range	Mortgages	HELOC	Qualifying revolving	Other retail	Total	Total
Exceptionally Low	**0.0000% – 0.0499%**	**$ –**	**$ –**	**$ 11,657**	**$ 498**	**$ 12,155**	$ 16,026
Very Low	**0.0500% – 0.1999%**	**41,146**	**32,079**	**9,348**	**6,971**	**89,544**	80,507
Low	**0.2000% – 0.9999%**	**73,094**	**5,130**	**12,091**	**16,721**	**107,036**	94,081
Medium Low	**1.0000% – 2.9999%**	**6,494**	**1,068**	**7,893**	**5,123**	**20,578**	17,070
Medium	**3.0000% – 9.9999%**	**738**	**310**	**3,594**	**2,569**	**7,211**	8,583
High	**10.0000% – 19.9999%**	**345**	**185**	**354**	**486**	**1,370**	889
Extremely High	**20.0000% – 99.9999%**	**416**	**69**	**803**	**303**	**1,591**	1,453
Default	**100%**	**195**	**70**	**147**	**176**	**588**	607
Total		**$ 122,428**	**$ 38,911**	**$ 45,887**	**$ 32,847**	**$ 240,073**	$ 219,216

(1) After credit risk mitigation.

Retail standardized portfolio

The retail standardized portfolio of $87 billion as at October 31, 2018 (2017 – $70 billion) was comprised of residential mortgages, personal loans, credit cards and lines of credit to individuals, mainly in the Latin American and Caribbean region. Of the total retail standardized exposures, $45 billion (2017 –$34 billion) was represented by mortgages and loans secured by residential real estate, mostly with a loan-to-value ratio of below 80%.

(iv) Collateral

Collateral held

In the normal course of business, to reduce its exposure to counterparty credit risk, the Bank receives collateral for capital markets related activities. The following are examples of the terms and conditions customary to collateral for these types of transactions:

- The risks and rewards of the pledged assets reside with the pledgor.
- Additional collateral is required when the market value of the transaction exceeds thresholds agreed upon with the pledgor.
- The Bank is normally permitted to sell or repledge the collateral it receives, although this right is specific to each agreement under which the collateral is pledged.
- Upon satisfaction of the obligation, the Bank must return the pledged assets, unless the Bank has the right to sell or repledge the collateral it receives, in which case the Bank must return comparable collateral to the pledgor.

As at October 31, 2018, the approximate market value of cash and securities collateral accepted that may be sold or repledged by the Bank was $136 billion (2017 – $115 billion). This collateral is held primarily in connection with reverse repurchase agreements, margin loans, securities lending and derivative transactions. The Bank also borrows securities under standard securities borrowing agreements that it is able to re-pledge. Including these borrowed securities, the approximate market value of securities collateral accepted that may be sold or re-pledged was $183 billion (2017 – $169 billion), of which approximately $29 billion was not sold or re-pledged (2017 – $24 billion).

Collateral pledged

In the normal course of business, securities and other assets are pledged to secure an obligation, participate in clearing or settlement systems, or operate in a foreign jurisdiction. Note 36(d) details the nature and extent of the Bank's asset pledging activities. Asset pledging transactions are conducted under terms that are common and customary to standard derivative, securities financing, and other borrowing activities. Standard risk management controls are applied with respect to asset pledging.

Assets acquired in exchange for loans

The carrying value of assets acquired in exchange for loans as at October 31, 2018 was $426 million (2017 – $412 million) mainly comprised of real estate and was classified as either held for sale or held for use as appropriate.

(b) Liquidity risk

Liquidity risk is the risk that the Bank is unable to meet its financial obligations in a timely manner at reasonable prices. The Bank's liquidity risk is subject to extensive risk management controls and is managed within the framework of policies and limits approved by the Board. The Board receives reports on risk exposures and performance against approved limits. The Asset-Liability Committee (ALCO) provides senior management oversight of liquidity risk.

The key elements of the Bank's liquidity risk management framework include:

- liquidity risk measurement and management limits, including limits on maximum net cash outflow by currency over specified short-term horizons;
- prudent diversification of its wholesale funding activities by using a number of different funding programs to access the global financial markets and manage its maturity profile, as appropriate;
- large holdings of liquid assets to support its operations, which can generally be sold or pledged to meet the Bank's obligations;
- liquidity stress testing, including Bank-specific, global-systemic, and combination systemic/Bank-specific scenarios; and
- liquidity contingency planning.

The Bank's foreign operations have liquidity management frameworks that are similar to the Bank's framework. Local deposits are managed from a liquidity risk perspective based on the local management frameworks and regulatory requirements.

(i) Commitments to extend credit

In the normal course of business, the Bank enters into commitments to extend credit in the form of loans or other financings for specific amounts and maturities, subject to specific conditions. These commitments, which are not reflected on the Consolidated Statement of Financial Position, are subject to normal credit standards, financial controls and monitoring procedures.

(ii) Derivative instruments

The Bank is subject to liquidity risk relating to its use of derivatives to meet customer needs, generate revenues from trading activities, manage market and credit risks arising from its lending, funding and investment activities, and lower its cost of capital. The maturity profile of the notional amounts of the Bank's derivative instruments is summarized in Note 10(b).

(c) Market risk

Market risk arises from changes in market prices and rates (including interest rates, credit spreads, equity prices, foreign exchange rates and commodity prices), the correlations between them, and their levels of volatility. Market risk is subject to extensive risk management controls, and is managed within the framework of market risk policies and limits approved by the Board. The ALCO and Market Risk Management and Policy Committee oversee the application of the framework set by the Board, and monitor the Bank's market risk exposures and the activities that give rise to these exposures.

The Bank uses a variety of metrics and models to measure and control market risk exposures. The measurements used are selected based on an assessment of the nature of risks in a particular activity. The principal measurement techniques are Value at Risk (VaR), stress testing, sensitivity analysis and simulation modeling, and gap analysis. The Board reviews results from these metrics quarterly. Models are independently validated internally prior to implementation and are subject to formal periodic review.

VaR is a statistical measure that estimates the potential loss in value of the Bank's trading positions due to adverse market movements over a defined time horizon with a specified confidence level. The quality of the Bank's VaR is validated by regular back testing analysis, in which the VaR is compared to theoretical and actual profit and loss results. To complement VaR, the Bank also uses stress testing to examine the impact that abnormally large swings in market factors and periods of prolonged inactivity might have on trading portfolios. The stress testing program is designed to identify key risks and ensure that the Bank's capital can absorb potential losses from abnormal events. The Bank subjects its trading portfolios to a series of stress tests on a daily, weekly and monthly basis.

In trading portfolios, sensitivity analysis is used to measure the effect of changes in risk factors, including prices and volatility, on financial products and portfolios. In non-trading portfolios, sensitivity analysis assesses the effect of changes in interest rates on current earnings and on the economic value of shareholders' equity. Simulation modeling under various scenarios is particularly important for managing risk in the deposit, lending and investment products the Bank offers to its retail customers. Gap analysis is used to assess the interest rate sensitivity of the Bank's retail, wholesale banking and international operations. Under gap analysis, interest rate-sensitive assets, liabilities and derivative instruments are assigned to defined time periods, on the earlier of contractual repricing or maturity dates on the basis of expected repricing dates.

(i) Non-trading interest rate risk

Interest rate risk, inclusive of credit spread risk, is the risk of loss due to the following: changes in the level, slope and curvature of the yield curve; the volatility of interest rates; mortgage prepayment rates; changes in the market price of credit; and the creditworthiness of a particular issuer. The Bank actively manages its interest rate exposures with the objective of protecting and enhancing net interest income within established risk tolerances. Interest rate risk arising from the Bank's funding and investment activities is managed in accordance with Board-approved policies and global limits, which are designed to control the risk to net interest income and economic value of shareholders' equity. The income limit measures the effect of a specified shift in interest rates on the Bank's annual net income over the next twelve months, while the economic value limit measures the impact of a specified change in interest rates on the present value of the Bank's net assets. These calculations are based on a constant balance sheet and make no assumptions for management actions that may mitigate the risk.

Interest rate sensitivity

Based on the Bank's interest rate positions, the following table shows the pro-forma after-tax impact on the Bank's net interest income over the next twelve months and economic value of shareholders' equity of an immediate and sustained 100 basis point increase and decrease in interest rates across major currencies as defined by the Bank.

As at October 31 ($ millions)	**2018**						2017	
	Net income			Economic value of equity				
	Canadian dollar	Other currencies	Total	Canadian dollar	Other currencies	Total	Net income	Economic value of equity
100 bp increase	**$ (181)**	**$ 76**	**$ (105)**	**$ (458)**	**$ (412)**	**$ (870)**	$ 64	$ (354)
100 bp decrease	**$ 177**	**$ (76)**	**$ 101**	**$ 291**	**$ 506**	**$ 797**	$ (67)	$ 183

(ii) Non-trading foreign currency risk

Foreign currency risk is the risk of loss due to changes in spot and forward rates, and the volatility of currency exchange rates. Non-trading foreign currency risk, also referred to as structural foreign exchange risk, arises primarily from the Bank's net investments in self-sustaining foreign operations and is controlled by a Board-approved limit. This limit considers potential volatility to shareholders' equity as well as the potential impact on capital ratios from foreign exchange fluctuations. On a quarterly basis, the Asset-Liability Committee (ALCO) reviews the Bank's exposures to these net investments. The Bank may fully or partially hedge this exposure by funding the investments in the same currency, or by using other financial instruments, including derivatives.

The Bank is subject to foreign currency risk on the earnings of its foreign operations. To manage this risk, foreign currency revenues and expenses, which are primarily denominated in U.S. dollars, are projected over a number of future fiscal quarters. The ALCO assesses economic data and forecasts to decide on the portion of the estimated future foreign currency revenues and expenses to hedge. Hedging instruments normally include foreign currency spot and forward contracts, as well as foreign currency options and swaps.

As at October 31, 2018, a one percent increase (decrease) in the Canadian dollar against all currencies in which the Bank operates decreases (increases) the Bank's before-tax annual earnings by approximately $65 million (October 31, 2017 – $58 million) in the absence of hedging activity, primarily from exposure to U.S. dollars. A similar change in the Canadian dollar as at October 31, 2018 would increase (decrease) the unrealized foreign currency translation losses in the accumulated other comprehensive income in equity by approximately $384 million (2017 – $345 million), net of hedging.

(iii) Non-trading equity risk

Equity risk is the risk of loss due to adverse movements in equity prices. Equity price risk is often classified into two categories: general equity risk, which refers to the sensitivity of an instrument or portfolio's value to changes in the overall level of equity prices, and specific equity risk, which refers to that portion of an individual equity instrument's price volatility that is determined by entity-specific characteristics.

The Bank is exposed to equity risk through its equity investment portfolios, which are controlled by Board-approved portfolio, VaR, and stress-test limits. Equity investments include common and preferred shares, as well as a diversified portfolio of third-party managed funds.

The majority of the Bank's equity investment portfolios are managed by Group Treasury under the strategic direction of the ALCO. Group Treasury delegates the management of a portion of equity and equity-related portfolios to other external fund managers to take advantage of these fund managers' expertise in particular market niches and products.

The fair value of equity securities designated at FVOCI is shown in Note 12.

(iv) Trading portfolio risk management

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

Market risk arising from the Bank's trading activities is managed in accordance with Board-approved policies and limits, including aggregate VaR and stress testing limits.

Trading portfolios are marked-to-market in accordance with the Bank's valuation policies. Positions are marked-to-market daily and valuations are independently reviewed by back office, GRM or finance units on a regular basis. These units also provide profit and loss reporting, as well as VaR and limit compliance reporting to business unit management and executive management for evaluation and action as appropriate. VaR is calculated daily using a 99% confidence level, and a one-day holding period. This means that, once in every 100 days, the trading positions are expected to lose more than the VaR estimate. The Bank calculates general market risk VaR using historical simulation based on 300 days of market data. For debt specific risk VaR, the Bank uses historical resampling. The table below shows the Bank's VaR by risk factor:

		For the year ended October 31, 2018			
($ millions)	**As at October 31, 2018**	Average	High	Low	As at October 31, 2017
Credit spread plus interest rate	**$ 11.0**	**$ 11.6**	**$ 17.8**	**$ 6.9**	$ 10.1
Credit spread	**6.2**	**7.8**	**12.2**	**4.8**	6.9
Interest rate	**7.7**	**9.5**	**17.2**	**4.3**	8.4
Equities	**5.8**	**3.0**	**15.5**	**1.2**	3.2
Foreign exchange	**2.8**	**3.3**	**5.8**	**1.1**	2.9
Commodities	**1.7**	**1.6**	**2.1**	**1.0**	1.3
Debt specific	**3.6**	**3.4**	**4.2**	**2.6**	3.3
Diversification effect	**(11.7)**	**(10.0)**	**n/a**	**n/a**	(10.3)
All-Bank VaR	**$ 13.2**	**$ 12.9**	**$ 18.4**	**$ 8.6**	$ 10.6
All-Bank stressed VaR	**$ 44.6**	**$ 42.7**	**$ 59.0**	**$ 26.3**	$ 34.7

Below are the market risk capital requirements as at October 31, 2018.

($ millions)	
All-Bank VaR	**$ 124**
All-Bank stressed VaR	**419**
Incremental risk charge	**95**
Standardized approach	**31**
Total market risk capital	**$ 669**[(1)]

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

(d) Operational risk

Operational risk is the risk of loss, whether direct or indirect, to which the Bank is exposed due to inadequate or failed internal processes or systems, human error, or external events. Operational risk includes legal and regulatory risk, business process and change risk, fiduciary or disclosure breaches, technology failure, financial crime and environmental risk. Operational risk, in some form, exists in each of the Bank's businesses and support activities, and can result in financial loss, regulatory sanctions and damage to the Bank's reputation. The Bank has developed policies, processes and assessment methodologies to ensure that operational risk is appropriately identified and managed with effective controls with a view to safeguarding client assets and preserving shareholder value.

38 Business Combinations

Acquisitions that closed in 2018

Jarislowsky, Fraser Limited, Canada

On May 1, 2018, the Bank completed the acquisition of Jarislowsky, Fraser Limited, an independent investment firm with approximately $40 billion in assets under management on behalf of institutional and high net worth clients. The purchase price of $978 million was satisfied primarily by the issuance of 11.1 million common shares valued at $878 million and cash of $44 million. The fair value of the common shares issued is based on the quoted price of the shares of the Bank as at May 1, 2018 which was $78.86. Included in this purchase price is an earn-out of an amount of $56 million in additional common shares which may be paid based on achieving future growth targets. The acquired business forms part of the Canadian Banking business segment.

The fair value of the identifiable net assets of Jarislowsky, Fraser Limited at the date of acquisition was:

($ million)	
Total net assets acquired	**$ 9**
Intangible assets	
Finite life intangible asset arising on acquisition[1]	**255**
Indefinite life intangible assets arising on acquisition[2]	**308**
Deferred tax liability	**(150)**
Goodwill arising on acquisition	**556**
Purchase consideration transferred	**$ 978**

(1) Comprised of customer relationship intangible of $255.
(2) Comprised of fund management contracts of $290 and trademark of $18.

Goodwill of $556 million largely reflects the value of synergies expected by combining certain operations within the Bank's asset management businesses as well as Jarislowsky Fraser's strong market presence and future growth prospects.

Citibank's consumer and small and medium enterprise operations, Colombia

On June 30, 2018, the Bank's Colombian subsidiary, Scotiabank Colpatria S.A., completed the previously announced acquisition of Citibank's consumer (retail and credit cards) and small and medium enterprise operations in Colombia. The acquired business forms part of the Bank's International Banking business segment.

The Bank has not finalized its initial accounting for the acquisition as it is still completing its valuation of the assets acquired and liabilities assumed. As at October 31, 2018, $2.0 billion of assets (mainly loans of $1.9 billion) and $1.4 billion of liabilities (mainly deposits of $1.3 billion) have been recorded. Subsequent adjustment during the measurement period will occur as the Bank completes its estimation of fair values of assets acquired and liabilities assumed.

BBVA, Chile

On July 6, 2018, the Bank acquired 68.2% of Banco Bilbao Vizcaya Argentaria, Chile, 100% of BBVA Seguros Vida S.A., 100% of Servicios Corporativos S.A., 68.1% of Inmobiliaria e Inversiones S.A. and 4.1% of Inversiones DCV S.A. (together "BBVA Chile") in Chile for cash consideration of US$ 2.2 billion, following receipt of regulatory approvals in Chile and Canada. The Bank consolidated 100% of BBVA Chile's assets and liabilities and recorded a non-controlling interest of 31.8%. The acquired business forms part of the International Banking business segment.

On September 1, 2018, BBVA Chile merged with Scotiabank Chile. The minority shareholder in BBVA Chile paid the Bank US$ 0.4 billion to increase their pro forma ownership of the merged entity. Subsequent to these transactions, the Bank retained control over the combined entity with 75.5% of the total shares. Under this agreement, the non-controlling shareholders have the option to sell all or a portion of their shares to the Bank at the then fair value, which can be settled, at the Bank's discretion, by the issuance of common shares or cash.

Based on the current estimates of acquisition date fair values, the Bank has estimated and recorded loans of $19.9 billion, other assets of $8.4 billion and an aggregate amount of goodwill and intangibles of $1.3 billion. Simultaneously, the Bank has recorded deposits of $13.4 billion and other liabilities of $12.8 billion. The Bank had recorded a non-controlling interest in BBVA Chile of approximately $0.6 billion at the time of the acquisition, which changed to approximately $0.8 billion at the time of the merger of BBVA Chile with Scotiabank Chile. The purchase price allocation is considered to be preliminary and subsequent adjustments during the measurement period will occur as the Bank completes its estimation of fair values of assets acquired and liabilities assumed.

MD Financial Management, Canada

On October 3, 2018, the Bank completed the previously announced acquisition of MD Financial Management ("MD Financial") from the Canadian Medical Association, ("CMA"), for approximately $2.7 billion, payable in cash. MD Financial is Canada's leading provider of financial services to physicians and their families, with approximately $49 billion in assets under management and administration. The acquired business forms part of the Canadian Banking business segment.

On closing, the Bank and the CMA entered into a 10- year affinity agreement under which the Bank has committed to pay $115 million over the next 10 years to support the advancement of the medical profession and health care in Canada.

Based on current estimates of acquisition date fair values, the Bank has estimated and recorded approximately $1.9 billion of indefinite life intangibles, goodwill of $1.2 billion, $70 million of finite life intangibles, $0.5 billion of deferred tax liabilities and $0.1 billion of other net assets acquired. The

purchase price allocation is considered to be preliminary and will be refined as the Bank completes its valuation of the fair value of assets acquired and liabilities assumed.

Aggregate impact to Consolidated Income

For the year ended October 31, 2018, all four acquisitions contributed revenue of $394 million in aggregate and a net loss of $257 million in aggregate.

The primary reason for the net loss is the recording of a provision for credit losses of $404 million ($285 million after-tax) on acquired performing financial assets, as required under IFRS 9.

Acquisition costs directly related to the four acquisitions of $44 million are included in non-interest expenses in the Consolidated Statement of Income.

Acquisitions announced but not closed

Banco Cencosud, Peru

On May 9, 2018, the Bank announced that Scotiabank Peru, its wholly owned subsidiary, has reached an agreement to acquire a 51% controlling interest in Banco Cencosud, which offers credit cards and consumer loans in Peru, for approximately $130 million. Under the terms of the agreement, the two companies will also enter into a 15-year partnership to manage the credit card business and provide additional products and services to customers.

Subject to regulatory approvals and closing conditions the acquisition is expected to close in the first quarter of 2019.

Banco Dominicano del Progreso, Dominican Republic

On August 14, 2018, the Bank announced that it has reached an agreement to acquire Banco Dominicano del Progreso, S.A. – Banco Múltiple (Banco Dominicano del Progreso), a bank with operations in the Dominican Republic, subject to regulatory approval. The transaction is not considered financially material to the Bank.

Subject to regulatory approvals and closing conditions the acquisition is expected to close in the first quarter of 2019.

Shareholder Information

Annual meeting

Shareholders are invited to attend the 187th Annual Meeting of Holders of Common Shares, to be held on April 9, 2019, at Scotiabank Centre, Scotia Plaza, 40 King Street West, 2nd Floor, Toronto, Ontario beginning at 9:00 a.m. local time. The record date for determining shareholders entitled to receive notice of and to vote at the meeting will be the close of business on February 12, 2019.

Shareholdings and dividends

Information regarding your shareholdings and dividends may be obtained by contacting the transfer agent.

Direct deposit service

Shareholders may have dividends deposited directly into accounts held at financial institutions which are members of the Canadian Payments Association. To arrange direct deposit service, please write to the transfer agent.

Dividend and Share Purchase Plan

Scotiabank's dividend reinvestment and share purchase plan allows common and preferred shareholders to purchase additional common shares by reinvesting their cash dividend without incurring brokerage or administrative fees. As well, eligible shareholders may invest up to $20,000 each fiscal year to purchase additional common shares of the Bank. All administrative costs of the plan are paid by the Bank. For more information on participation in the plan, please contact the transfer agent.

Listing of shares

Common shares of the Bank are listed for trading on the Toronto and New York stock exchanges.

Series 22, Series 23, Series 30, Series 31, Series 32, Series 33, Series 34, Series 36, Series 38, and Series 40 preferred shares of the Bank are listed on the Toronto Stock Exchange.

Stock Symbols

STOCK	TICKER SYMBOL	CUSIP NO.
Common shares	BNS	064149 10 7
Series 22, Preferred	BNS.PR.R	064149 69 3
Series 23, Preferred	BNS.PR.C	064149 68 5
Series 30, Preferred	BNS.PR.Y	064149 63 6
Series 31, Preferred	BNS.PR.D	064149 62 8
Series 32, Preferred	BNS.PR.Z	064149 61 0
Series 33, Preferred	BNS.PR.F	064149 59 4
Series 34, Preferred	BNS.PR.E	064149 55 2
Series 36, Preferred	BNS.PR.G	064151 20 2
Series 38, Preferred	BNS.PR.H	064151 11 1
Series 40, Preferred	BNS.PR.I	06415E 30 3

Dividend Dates for 2019

Record and payment dates for common and preferred shares, subject to approval by the Board of Directors.

RECORD DATE	PAYMENT DATE
January 2	January 29
April 2	April 26
July 2	July 29
October 1	October 29

Valuation day price

For Canadian income tax purposes, The Bank of Nova Scotia's common stock was quoted at $31.13 per share on Valuation Day, December 22, 1971. This is equivalent to $2.594 after adjusting for the two-for-one stock split in 1976, the three-for-one stock split in 1984, and the two-for-one stock split in 1998. The stock dividend in 2004 did not affect the Valuation Day amount. The stock received as part of the 2004 stock dividend is not included in the pre-1972 pool.

Duplicated communication

Some registered holders of The Bank of Nova Scotia shares might receive more than one copy of shareholder mailings, such as this Annual Report. Every effort is made to avoid duplication; however, if you are registered with different names and/or addresses, multiple mailings may result. If you receive, but do not require, more than one mailing for the same ownership, please contact the transfer agent to combine the accounts.

Credit ratings

LEGACY SENIOR DEBT/DEPOSITS

DBRS	AA
Fitch	AA-
Moody's	Aa2
Standard & Poor's	A+

SENIOR DEBT

DBRS	AA(low)
Fitch	AA-
Moody's	A2
Standard & Poor's	A-

SHORT TERM DEPOSITS/COMMERCIAL PAPER

DBRS	R-1(high)
Fitch	F1+
Moody's	P-1
Standard & Poor's	A-1

SUBORDINATED DEBENTURES[1]

DBRS	A(high)
Fitch	A+
Moody's	Baa1
Standard & Poor's	A-

SUBORDINATED DEBENTURES (NVCC)

DBRS	A(low)
Fitch	–
Moody's	Baa1
Standard & Poor's	BBB+

NON-CUMULATIVE PREFERRED SHARES[1]

DBRS	Pfd-2(high)
Moody's	Baa3(hyb)
Standard & Poor's	BBB/P-2*

NON-CUMULATIVE PREFERRED SHARES (NVCC)

DBRS	Pfd-2
Moody's	Baa3(hyb)
Standard & Poor's	BBB-/P-2(low)*

*Canadian Scale

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[2] 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.

(1) Excluding instruments with Non-Viability Contingent Capital Features
(2) Referring 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.

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 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.

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: Unutilized portion of authorized committed credit lines.

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.

Additional information

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