

# BUILDING THE ECONOMY OF EVERYONE

2017 ANNUAL REPORT

# WHY INVEST IN SCOTIABANK?

## DIVIDEND GROWTH

Dollars per share



- Diversified by business and geography; providing sustainable and growing earnings
- Earnings momentum in personal, commercial and wealth businesses – globally
- Attractive growth opportunities in our key Pacific Alliance markets
- Focused on digitization to strengthen customer experience and improve efficiency
- Strong risk management culture
- Consistent record of dividend increases
- Strong balance sheet with prudent capital and liquidity positions

## EARNINGS PER SHARE\*

Diluted, dollars per share



RETURN ON EQUITY:\* **14.6%** ..... vs ..... **14.3%** in 2016

## STRONG CAPITAL POSITION

\*Adjusted - please refer to page 14 of the MD&A

## CONTENTS

- 1 Message from the President and Chief Executive Officer
- 7 Executive Management Team
- 8 Board of Directors
- 9 Message from the Chairman of the Board
- 11 Management's Discussion and Analysis
- 125 Consolidated Financial Statements



We believe every customer – corporate, commercial, wealth and retail – has the right to become better off. Through advice, financial services and community support, we are committed to building the personal economy of every one of our customers. We know that when our customers and the communities they live and work in prosper, we all prosper.

# CEO'S MESSAGE

to Shareholders



**Brian Porter**

President and  
Chief Executive Officer

## Dear fellow Shareholders,

At 185 years old, Scotiabank is older than the country of Canada itself. From our humble beginnings in Halifax, Nova Scotia, we have become one of the world's largest and soundest banks. We are proud to be a critical part of the economic fabric of the countries in which we operate. This is a responsibility that Scotiabankers take seriously, and we are honoured by the trust placed in us by our customers and shareholders.

The Bank's history is a testament to our past success, but it does not guarantee our future success. That is why, since becoming President and CEO four years ago, I have been most focused on setting and implementing a Strategic Agenda that positions our Bank for a successful future. Our strategy considers how to deploy shareholder capital strategically and responsibly, while delivering a superior banking experience for our customers. As you will read in the letter below, we are pleased with the progress we have made to date and vigilant about the need to drive continuous change.

## Financial Results

2017 was another good year for the Bank. Each of our business lines delivered strong results – despite only moderate growth in some key countries, increased competitive pressures, elevated regulatory requirements, geopolitical challenges and an unusually high number of natural disasters across our footprint.

Our good momentum can be seen by the strong relative performance of our stock price for the past two fiscal years. Our shares appreciated more than 35% since the end of 2015, compared to the peer average of 29%, and had the 2nd strongest performance among our Big 5 peer group.

**Canadian Banking** generated record earnings in 2017, delivering good revenue growth and meaningful cost savings – a portion of which are being re-invested to build

a better banking experience for our customers. Since I took over as President and CEO, we have increased our focus on actively managing our business mix. Among our Canadian peer group, we are the only bank to have improved our Net Interest Margin over the past four-year period – an accomplishment we are proud of, particularly in a low interest-rate environment.

Our ongoing focus on the Pacific Alliance region (comprised of Mexico, Peru, Chile and Colombia) continues to translate into very strong earnings growth in **International Banking**. Once again, the division delivered record earnings and achieved year-over-year gains in loan market share across the Pacific Alliance region. Scotiabank now ranks as the 5th largest bank in Mexico, and we improved our competitive position in Chile.

Good results in our core personal and commercial banking businesses have contributed to strong Return on Equity (ROE) at the all-Bank level. International Banking ROE, in particular, has improved by approximately 300 bps from 11.7% since 2014 to 14.6% today.

Our footprint is key to our investment thesis, and an important differentiator for us as Canada's International Bank. Some people are surprised to learn that more than 50,000 of our 88,000 employees reside outside of Canada. We remain highly-confident in the above-average earnings potential of our international business, particularly in the Pacific Alliance region, which we will continue to grow organically and through selective acquisitions within our footprint.

**Global Banking and Markets** (GBM) had a stronger year in 2017. Earnings were up 16% over 2016, and we saw some encouraging growth of our presence and relevance in Latin American markets. As an example, for the better part of the year, Scotiabank was at the top of Bloomberg's Bookrunner League Table for Syndicated Loans in Latin America.

We will continue to implement our strategy for GBM, which includes expanding our investment banking and capital markets capabilities in Canada, and better leveraging the Bank's wholesale capabilities into the Pacific Alliance region.

## Building an Even Better Bank

In addition to delivering strong financial results in 2017, we also made considerable progress on our Strategic Agenda, which guides us as we build an even better Bank and create value for you, our shareholders.

We are pleased to highlight a few notable achievements below, which represent a small sample of the many significant changes we are making across the Bank:

### Customer Focus

The core of our Strategic Agenda continues to be our focus on our 24 million customers. This means ensuring that the voice of the customer is directly embedded into everything we do, on a continuous basis. Throughout the year, we rolled-out a number of initiatives to do exactly that. One example is our implementation of a bank-wide customer experience management system – called The Pulse or El Pulso. The Pulse is a powerful digital system that allows us to continuously gather feedback from our customers, through the channels in which they choose to bank with us. We have already received feedback from more than 2 million customers and made 150,000 call-backs to customers. The rich data we are gathering allows us to better understand our customers' needs and prioritize investments to improve their banking experience.

### Digital

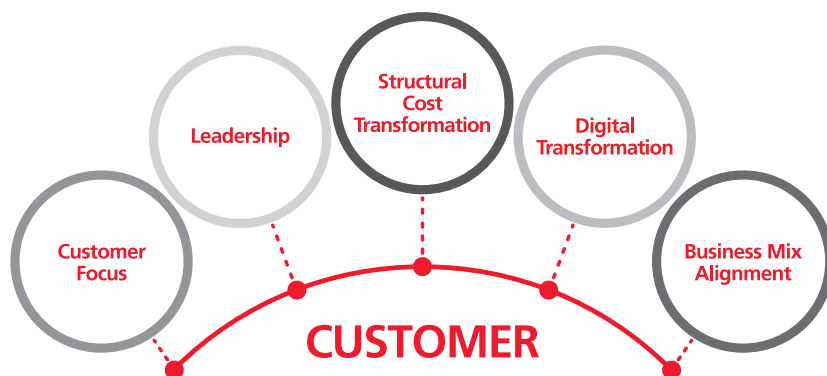
Two years ago, we embarked on a digital transformation journey to better serve our customers and become more efficient. To demonstrate our commitment to digital leadership, in 2017, we were the first bank in Canada to hold a Digital Banking Update. At the event, we communicated our digital vision and strategy for achieving that vision to the investment community. The targets we presented in February are bold and aspirational. We have more work to do, but we are pleased by the progress we are making. A good example is our Digital Factory Network, which is now fully-operational in Canada, Mexico, Peru, Chile and Colombia. The Network features a global operating model and is a key pillar of our digital strategy, as it leverages our international scale and diversity of talent across our footprint. It is also a driver of internal innovation.

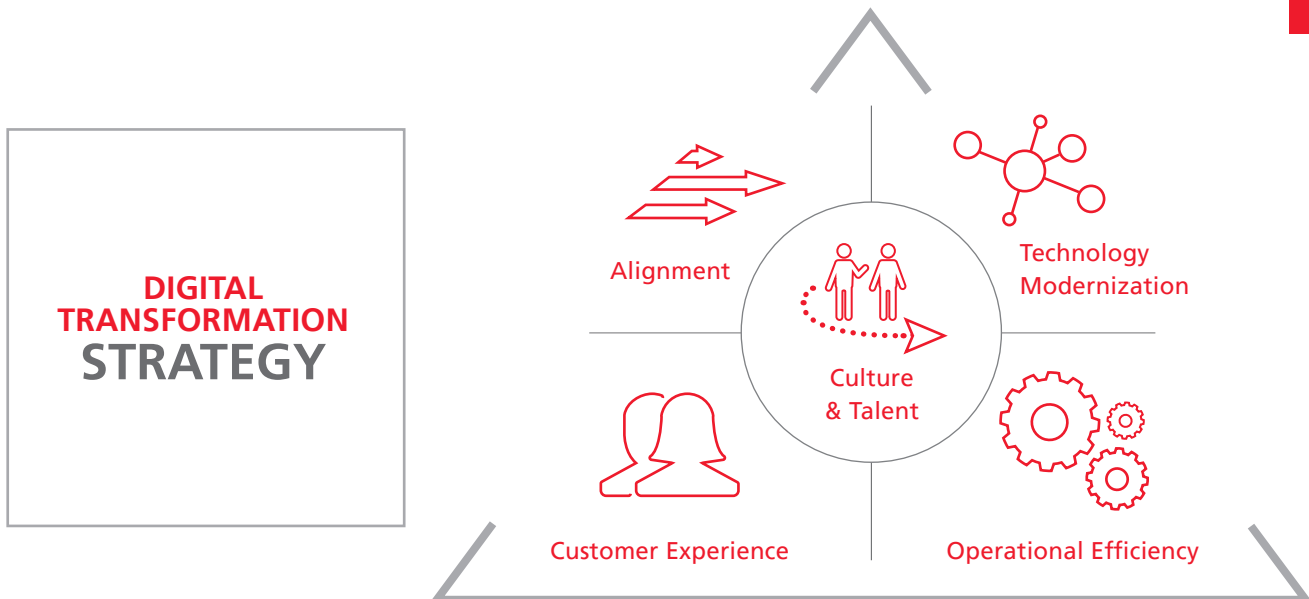
### Financial Strength

Our increased attention to business mix has led to us focus equally on both sides of the balance sheet. We have grown deposits to support a reduction of wholesale funding. To date, we have reduced our wholesale funding ratio by approximately 20%. As a result, we have lowered our funding costs and further strengthened our financial position.

### Capital Deployment

Scotiabank has the strongest Common Equity Tier 1 (CET1) ratio in our peer group at 11.5%. Our strong capital position provides us with optionality to deploy capital for organic growth, acquisitions, dividends and share buybacks. We are focused on deploying internally-generated capital to grow the Bank and provide returns to you, our shareholders, through active capital management. Over the past four years, the Bank has generated approximately \$30 billion of internal capital.





Approximately half of this capital has been returned to shareholders in the form of dividends and selective share buybacks. The Bank has repurchased approximately 36 million shares at an average price of \$67 – for context, our share price as of October 31 was \$83.28. A quarter of the remaining capital was deployed to support organic business growth in the Bank, while the balance was used for technology investments, and to further build the Bank’s capital levels.

**Low Cost by Design**

During 2016, we announced a major undertaking to significantly transform the Bank’s cost structure – something we refer to internally as our Structural Cost Transformation (SCT) program. 2017 was the first full year of our SCT program, and I am pleased to report that it is progressing very well. It has generated \$500 million in savings, which is 40% better than the commitment we made in 2016. We are also on track to achieve our productivity ratio target of 52% by the end of 2019. Our SCT program continues to grow in scope, as we look at all opportunities across the Bank to reduce structural costs, while better serving our customers. The SCT program is a great example of how we are making the Bank better over the medium and longer-term, while also instilling a culture of continuous improvement.

**Leadership**

Over the past few years, we have invested significantly in our leadership teams. In addition to making several appointments at senior levels of the Bank, we have strengthened the Bank’s leadership capabilities with an infusion of new leaders from other businesses and industries. These new Scotiabankers have brought depth and a diversity of thought that continues to meaningfully improve our Bank’s strength and efficiency. At the same time, we have

invested heavily in internal training programs for our employees – several of our programs have received external recognition for leadership development.

**Diversity & Inclusion**

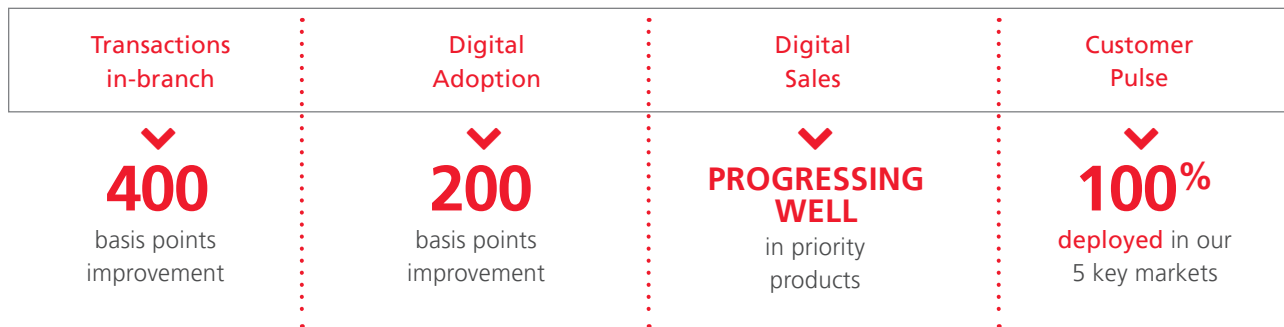
As Canada’s International Bank, we are inherently diverse. Scotiabankers understand that diversity leads to improved performance and a more inclusive work environment. That is why we are committed to diversity – including diversity of thought, experience, gender, culture, race, religion and sexual orientation at every decision-making table, and in all settings across the Bank. Tone from the top is critical in this regard, which is why I chair Scotiabank’s Inclusion Council. I am proud of the fact that since I was appointed President and CEO, the percentage of women at the VP+ level in Canada is at an all-time high of nearly 40% – up from 30% in 2014. While we have made some good progress in this area, our work is not done, particularly at the enterprise level. We have a number of initiatives underway to bring even greater diversity of all types to our leadership teams.

**Building our Brand**

Earlier this year, we were very proud to announce an expanded, 20-year partnership with Maple Leaf Sports & Entertainment (MLSE). The partnership includes naming rights for one of the most recognizable entertainment complexes in North America, and many other initiatives that will substantially enhance our brand as Canada’s Hockey Bank, create multiple opportunities to acquire new customers, and deepen existing customer relationships.

In 2017, the Bank reached the important milestone of supporting more than one million kids through our commitment to community hockey across Canada.

## DIGITAL VISION: PROGRESS UPDATE



Will improve All-Bank productivity ratio

Our historic agreement with MLSE provides us with even more opportunities to give back to the communities in which our customers and employees live and work.

### More Work Ahead

While we are proud of our progress to date, we still have a lot of work ahead of us on our journey to build an even better Bank. In particular, we need to move faster and with more agility. We also need to continue to sharpen our focus and discipline.

We talk internally about these efforts as ‘strengthening the core’ – a metaphor drawn from the world of physical fitness, where core strength is foundational to overall strength, balance and agility. Let me outline a few relevant examples of the efforts we have undertaken to get the Bank in better shape.

On **culture**, Scotiabank has a lot to be proud of. As I told our shareholders at our 2017 annual meeting, the Bank’s solid cultural foundation and strong moral compass have helped us successfully navigate periods of uncertainty and change. Scotiabankers possess qualities such as entrepreneurialism, integrity and courage to take risks. That said, some of the elements that we will need in the future will be different than what served us so well over the past 185 years. We have many initiatives underway to ensure our successful future, including efforts to drive a more performance-oriented culture.

On **pace**, we are focused on simplifying internal decision-making, improving or eliminating inefficient processes and acting with an increased sense of urgency. When it comes to prioritizing our use of scarce resources, we are laser-focused on those areas that will move the dial for our customers and for you, our shareholders.

On **innovation**, we are making strategic investments to provide superior products and services for our customers,

as well as strengthen internal systems and processes. Technology investments are improving our customers’ experience, and also helping to increase the efficiency and effectiveness of our employees, whether they are customer-facing or serving in our corporate functions. In 2017, the Bank invested more than \$3 billion in technology and related expenses – up 14% compared to 2016, in line with our global peers. Our investments in technology are up meaningfully from previous years, which is consistent with our strong commitment to digital leadership. We recognize that getting technology right is mission critical for Scotiabank and we will continue to make the necessary investments to achieve our goals.

One good example is Artificial Intelligence (AI). Developing and deploying AI capabilities is increasingly critical to all firms for improving a wide range of business outcomes, including customer experience, supply chains and cyber-security. We are actively deploying AI across many areas at the Bank and are committed to further developing our AI capabilities. To do so, we have entered into a number of partnerships with experts in the field, including the University of Toronto’s Rotman School of Business, the Vector Institute, and the Creative Destruction Labs at the University of Toronto and the University of British Columbia. Canada is well-positioned as a global leader in AI, and Scotiabank fully intends to leverage this as a competitive advantage in Canada as well as in our key international markets.

### Giving Back

We believe in partnerships as key enablers in giving back to the communities in which we live and work. That is why we build soccer fields in communities across Latin America and deliver sporting equipment to young people in Canada’s North.

That is why we sponsor several groups of young Canadian students to travel to Vimy, France and learn about the important contributions that brave Canadian soldiers made in World War I. And that is why, when our customers and employees face terrible natural disasters, we do what we can to help.

It was a very challenging year for many Scotiabankers, as well as many of our customers who faced flooding and wildfires in Canada; flooding and mudslides in Peru; flooding in Texas; Hurricanes Irma and Maria in the Caribbean; and earthquakes in Mexico. Our teams across the Bank played an important role in the relief effort each time a disaster hit – ensuring that our employees and customers were safe, and also had access to the necessary supplies and financial services. The Bank was proud to support the Red Cross and local charities with a number of large financial gifts. We also provided Canadians with the opportunity to donate to the Red Cross in any of our Scotiabank branches across Canada.

**We fundamentally believe that the changes we are driving will make us a stronger, more innovative and more competitive organization.**

In 2017, Scotiabank contributed more than \$80 million globally in donations, sponsorships and other forms of assistance, and Scotiabank employees contributed more than 400,000 hours of volunteering and fundraising time. I want to take this opportunity to thank all of the Scotiabankers for coming together to help our customers and each other during the past year. Your contributions have helped to make a real difference for our customers and employees.

### Looking Forward with Optimism

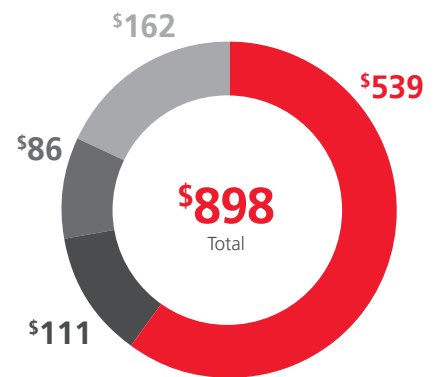
Transformation on the scale we are pursuing is not easy, but it is necessary. We know that we have a lot of work ahead of us, particularly when it comes to strengthening our culture, increasing our pace, and becoming a digital leader in our industry. We also understand that it will take time and resiliency to fully achieve our strategic agenda. But if I can leave you, our shareholders, with one takeaway from this year’s letter, it is this: We are deeply committed to our journey because we fundamentally believe that the changes we are driving will make us a stronger, more innovative and more competitive organization.

In closing, it continues to be an honour and privilege to serve your Bank as President and CEO. I am grateful to our customers, our shareholders and our Board Members for their trust. I also want to thank each and every Scotiabanker across our footprint for working hard over the past year on behalf of our customers and to deliver strong results for our shareholders.

While our Bank’s 185-year history has been written, the future is ours to determine, and I think that future is very exciting indeed.

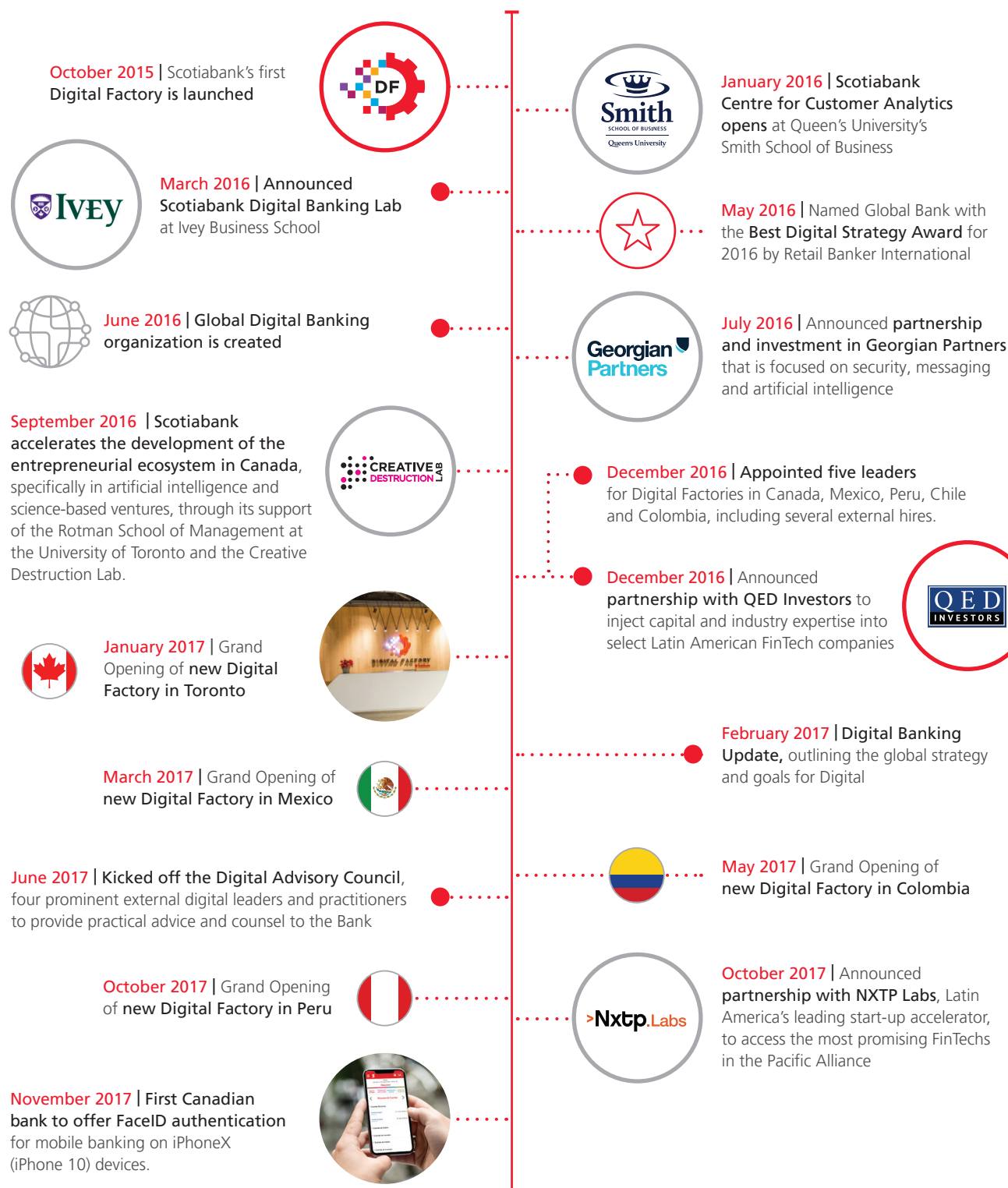


**AVERAGE ASSETS BY GEOGRAPHY**  
(in \$ billions)



■ Canada .....	<b>60%</b>
■ U.S. ....	<b>12%</b>
■ Pacific Alliance.....	<b>10%</b>
■ Other International .....	<b>18%</b>

## DIGITAL TRANSFORMATION HIGHLIGHTS





# EXECUTIVE MANAGEMENT TEAM

---

**Brian J. Porter**  
President and  
Chief Executive Officer

**Ignacio “Nacho”  
Deschamps**  
Group Head,  
International Banking  
and Digital Transformation

**Dieter W. Jentsch**  
Group Head, Global Banking  
and Markets

**Barbara Mason**  
Group Head and Chief Human  
Resources Officer

**Sean D. McGuckin**  
Group Head and  
Chief Financial Officer

**James O’Sullivan**  
Group Head,  
Canadian Banking

**Deborah M. Alexander**  
Executive Vice President  
and General Counsel

**Ian Arellano**  
Executive Vice President, Legal

**Andrew Branion**  
Executive Vice President  
and Group Treasurer

**John W. Doig**  
Executive Vice President  
and Chief Marketing Officer

**Terry Fryett**  
Executive Vice President  
and Chief Credit Officer

**Mike Henry**  
Executive Vice President  
and Chief Data Officer

**Marian Lawson**  
Executive Vice President,  
Global Financial Institutions  
and Transaction Banking

**James McPhedran**  
Executive Vice President,  
Canadian Banking

**Daniel Moore**  
Chief Risk Officer

**James Neate**  
Executive Vice President,  
International Corporate  
and Commercial Banking

**Dan Rees**  
Executive Vice President,  
Operations

**Gillian Riley**  
Executive Vice President,  
Canadian Commercial Banking

**Shawn Rose**  
Executive Vice President  
and Chief Digital Officer

**Anya Schnoor**  
Executive Vice President,  
Retail Payments, Deposits  
and Unsecured Lending

**Laurie Stang**  
Executive Vice President,  
Canadian Branch Banking

**Maria Theofilaktidis**  
Executive Vice President,  
Chief Compliance and  
Regulatory Officer

**Michael Zerbs**  
Chief Technology Officer

# BOARD OF DIRECTORS

**Thomas C. O'Neill**  
Chairman of the Board  
Scotiabank director since  
May 26, 2008

## Committee Chairs

**Tiff Macklem, Ph.D.**  
Dean of the Rotman School  
of Management at the  
University of Toronto  
Risk Committee Chair  
Scotiabank director since  
June 22, 2015

**Una M. Power**  
Corporate director  
Audit Committee Chair  
Scotiabank director since  
April 12, 2016

**Aaron W. Regent**  
Founding Partner of  
Magris Resources Inc.  
Human Resources  
Committee Chair  
Scotiabank director since  
April 9, 2013

**Susan L. Segal**  
President and Chief Executive  
Officer of the Americas Society  
and Council of the Americas  
Corporate Governance  
Committee Chair  
Scotiabank director since  
December 2, 2011

## Board of Directors

**Nora A. Aufreiter**  
Corporate director  
Scotiabank director since  
August 25, 2014

**Guillermo E. Babatz**  
Managing Partner of  
Atik Capital, S.C.  
Scotiabank director since  
January 28, 2014

**Scott B. Bonham**  
Corporate director  
and co-founder of  
Intentional Capital  
Scotiabank director since  
January 25, 2016

**Charles H. Dallara, Ph.D.**  
Executive Vice Chairman of  
the Board of Directors of  
Partners Group Holding AG  
and Chairman of the Americas  
Scotiabank director since  
September 23, 2013

**Eduardo Pacheco**  
Chief Executive Officer  
and a director of Mercantil  
Colpatria S.A.  
Scotiabank director since  
September 25, 2015

**Michael D. Penner**  
Chairman of the Board of  
Directors of Hydro-Québec  
Scotiabank director since  
June 26, 2017

**Brian J. Porter**  
President and Chief Executive  
Officer of Scotiabank  
Scotiabank director since  
April 9, 2013

**Indira V. Samarasekera,  
O.C., Ph.D.**  
Senior advisor at Bennett Jones  
LLP and a corporate director  
Scotiabank director since  
May 26, 2008

**Barbara S. Thomas**  
Corporate director  
Scotiabank director since  
September 28, 2004

**L. Scott Thomson**  
President and Chief  
Executive Officer of  
Finning International Inc.  
Scotiabank director since  
April 12, 2016

# CHAIRMAN'S MESSAGE

to Shareholders

**Thomas C. O'Neill**

Chairman of Scotiabank's  
Board of Directors



## Dear fellow Shareholders,

The Board is pleased with the continued progress that the Bank's management team is making against its Strategic Agenda, which is designed to deliver value for our customers and shareholders over the longer term.

In particular, the shift towards becoming a more customer-focused organization is resonating across the Bank's footprint. In October, our Board, and some of the Bank's senior leaders, travelled to Peru to visit our operations in Lima. In our discussions with the local management team, board members and customers, it was evident that the Bank's commitment to our 24 million customers transcends country boundaries. In each of the nearly 50 countries in which we operate, Scotiabankers are focused on delivering a superior banking experience and easy to use products and services. Putting the customer at the centre of everything we do has been key to our present strength and success, and that will continue to be so going forward.

The Bank's digital transformation is also progressing well. Embracing digital technology brings exciting opportunities for our customers and our employees. In addition, by leveraging technology and building strategic digital partnerships, we are better able to protect our customers and the Bank.

## Our Corporate Governance

Sound and effective corporate governance is essential for the long-term success of the Bank and the execution of our strategic vision. The Board is comprised of a diverse

and dedicated group of business professionals from around the world, who bring sound business insight and expertise to the table. Currently 13 of your Bank's 15 directors are independent, and our board includes directors of varying ages, cultures and geographic backgrounds.

During the year, we welcomed one new director and bid farewell to three others.

- In June, we were fortunate to have Michael Penner join the board. Michael brings a wide range of public and private sector leadership experience and his knowledge of the energy and retail sectors will be a tremendous asset.
- Ronald Brenneman, Paul Sobey and William Fatt retired in 2017. Their leadership and commitment has been invaluable to our success. We thank them for their years of service and their commitment to the Bank and our shareholders.

In closing, I would like to thank our President and CEO Brian Porter for his dedication to the Bank, and for the leadership he provides to the team of more than 88,000 Scotiabankers. Thanks also to our shareholders for their ongoing confidence and support.

A handwritten signature in black ink that reads "Tom C. O'Neill". The signature is written in a cursive style and is positioned above a thin horizontal line.

**COMMON EQUITY  
TIER 1 CAPITAL RATIO %**



For more information, please see page 44

# MD&A HIGHLIGHTS

Total Assets

**\$915**

Billion

Deposits

**\$625**

Billion

Loans

**\$504**

Billion

Revenue

**\$27**

Billion

Net Income

**\$8.2**

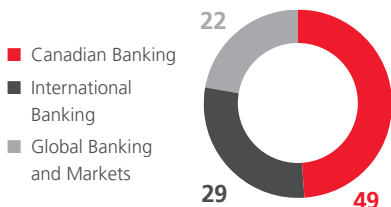
Billion

Total Taxes Paid

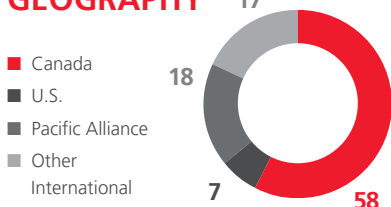
**\$3.2**

Billion

**EARNINGS BY  
BUSINESS LINE %**



**% INCOME BY  
GEOGRAPHY**



**MEDIUM-TERM FINANCIAL OBJECTIVES**

Objective:

2017 Results:

Return on Equity: **14%**

**14.6%**

Earnings Per Share Growth: **5 - 10%\***

**8.0%**

Maintain **Strong Capital Ratios**

**11.5%**

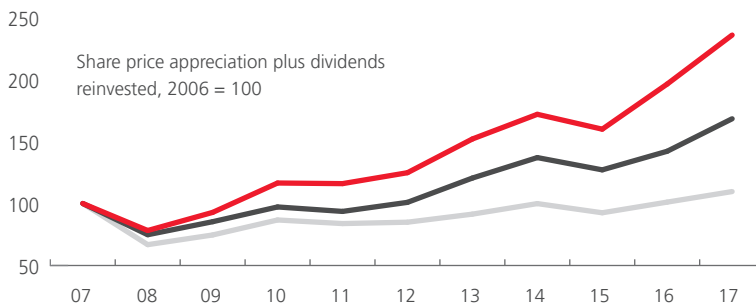
Achieve **Positive Operating Leverage\***

**-0.2%**

\*Adjusted - please refer to page 14 of the MD&A

**TOTAL RETURN  
TO COMMON  
SHAREHOLDERS**

Scotiabank ■  
S&P/TSX Banks Total Return Index ■  
S&P/TSX Composite Total Return Index ■



## Enhanced Disclosure Task Force (EDTF) Recommendations

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

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

Reference Table for EDTF			Pages		
			MD&A	Financial Statements	Supplementary Regulatory Capital Disclosures
Type of risk	Number	Disclosure			
General	1	The index of risks to which the business is exposed.	64, 67, 75		
	2	The Bank's risk to terminology, measures and key parameters.	60, 63		
	3	Top and emerging risks, and the changes during the reporting period.	57, 66, 72-74		
	4	Discussion on the regulatory development and plans to meet new regulatory ratios.	43-44, 84-85, 102-104		
Risk governance, risk management and business model	5	The Bank's Risk Governance structure.	58-60		
	6	Description of risk culture and procedures applied to support the culture.	60-63		
	7	Description of key risks from the Bank's business model.	64-65		
	8	Stress testing use within the Bank's risk governance and capital management.	62		
Capital Adequacy and risk-weighted assets	9	Pillar 1 capital requirements, and the impact for global systemically important banks.	43-44	182-183	1-2
	10	a) Regulatory capital components.	45		4, 5, 7
		b) Reconciliation of the accounting balance sheet to the regulatory balance sheet.			6
	11	Flow statement of the movements in regulatory capital since the previous reporting period, including changes in common equity tier 1, additional tier 1 and tier 2 capital.	46-47		7
	12	Discussion of targeted level of capital, and the plans on how to establish this.	43-44		
	13	Analysis of risk-weighted assets by risk type, business, and market risk RWAs.	49-53, 65, 112	160, 208	10-12
	14	Analysis of the capital requirements for each Basel asset class.	49-53	160, 200-207	11-19, 23-26
15	Tabulate credit risk in the Banking Book.	49-53	201	11-19, 22-25	
16	Flow statements reconciling the movements in risk-weighted assets for each risk-weighted asset type.	49-53		9	
17	Discussion of Basel III Back-testing requirement including credit risk model performance and validation.	51-52			
Liquidity Funding	18	Analysis of the Bank's liquid assets.	82-85		
	19	Encumbered and unencumbered assets analyzed by balance sheet category.	84		
	20	Consolidated total assets, liabilities and off-balance sheet commitments analyzed by remaining contractual maturity at the balance sheet date.	88-90		
	21	Analysis of the Bank's sources of funding and a description of the Bank's funding strategy.	86-88		
Market Risk	22	Linkage of market risk measures for trading and non-trading portfolios and the balance sheet.	81		
	23	Discussion of significant trading and non-trading market risk factors.	76-82	205-208	
	24	Discussion of changes in period on period VaR results as well as VaR assumptions, limitations, backtesting and validation.	76-82	205-208	
	25	Other risk management techniques e.g. stress tests, stressed VaR, tail risk and market liquidity horizon.	76-82	207-208	
Credit Risk	26	Analysis of the aggregate credit risk exposures, including details of both personal and wholesale lending.	72-74, 105-112	167-168, 202-203	12-20, 16-22 <sup>(1)</sup>
	27	Discussion of the policies for identifying impaired loans, defining impairments and renegotiated loans, and explaining loan forbearance policies.		140-142, 168	
	28	Reconciliations of the opening and closing balances of impaired loans and impairment allowances during the year.	71, 106-107, 109, 110	168	17-18 <sup>(1)</sup>
	29	Analysis of counterparty credit risk that arises from derivative transactions.	69-70	158, 160	
	30	Discussion of credit risk mitigation, including collateral held for all sources of credit risk.	69-70, 72		
Other risks	31	Quantified measures of the management of operational risk.	53, 91		
	32	Discussion of publicly known risk items.	57		

(1) In the Supplementary Financial Information Package

# TABLE OF CONTENTS

- 13 Forward-looking statements
- 14 Non-GAAP measures
- 15 Financial highlights

## Overview of Performance

- 16 Financial results: 2017 vs 2016
- 16 Medium Term Objectives
- 16 Shareholder returns
- 17 Economic outlook
- 17 Impact of foreign currency translation

## Group Financial Performance

- 18 Net income
- 18 Net interest income
- 20 Non-interest income
- 21 Provision for credit losses
- 23 Non-interest expenses
- 24 Income taxes
- 25 Financial results review: 2016 vs 2015
- 27 Fourth quarter review
- 29 Trending analysis

## Business Line Overview

- 30 Overview
- 31 Canadian Banking
- 34 International Banking
- 37 Global Banking and Markets
- 40 Other

## Group Financial Condition

- 42 Statement of financial position
- 43 Capital management

- 53 Off-balance sheet arrangements
- 56 Financial instruments
- 57 Selected credit instruments – publically known risk items

## Risk Management

- 58 Risk management framework
- 67 Credit risk
- 75 Market risk
- 82 Liquidity risk
- 91 Other risks

## Controls and Accounting Policies

- 95 Controls and procedures
- 95 Critical accounting estimates
- 99 Future accounting developments
- 102 Regulatory developments
- 104 Related party transactions

## Supplementary Data

- 105 Geographic information
- 108 Credit risk
- 113 Revenues and expenses
- 115 Selected quarterly information
- 116 Eleven-year statistical review

## FORWARD LOOKING STATEMENTS

Our public communications often include oral or written forward-looking statements. Statements of this type are included in this document, and may be included in other filings with Canadian securities regulators or the U.S. Securities and Exchange Commission, or in other communications. All such statements are made pursuant to the "safe harbor" provisions of the U.S. Private Securities Litigation Reform Act of 1995 and any applicable Canadian securities legislation. Forward-looking statements may include, but are not limited to, statements made in this document, the Management's Discussion and Analysis in the Bank's 2017 Annual Report under the headings "Outlook" and in other statements regarding the Bank's objectives, strategies to achieve those objectives, the regulatory environment in which the Bank operates, anticipated financial results (including those in the area of risk management), and the outlook for the Bank's businesses and for the Canadian, U.S. and global economies. Such statements are typically identified by words or phrases such as "believe," "expect," "anticipate," "intent," "estimate," "plan," "may increase," "may fluctuate," and similar expressions of future or conditional verbs, such as "will," "may," "should," "would" and "could."

By their very nature, forward-looking statements involve numerous assumptions, inherent risks and uncertainties, both general and specific, and the risk that predictions and other forward-looking statements will not prove to be accurate. Do not unduly rely on forward-looking statements, as a number of important factors, many of which are beyond the Bank's control and the effects of which can be difficult to predict, could cause actual results to differ materially from the estimates and intentions expressed in such forward-looking statements. These factors include, but are not limited to: the economic and financial conditions in Canada and globally; fluctuations in interest rates and currency values; liquidity and funding; significant market volatility and interruptions; the failure of third parties to comply with their obligations to the Bank and its affiliates; changes in monetary policy; legislative and regulatory developments in Canada and elsewhere, including changes to, and interpretations of tax laws and risk-based capital guidelines and reporting instructions and liquidity regulatory guidance; changes to the Bank's credit ratings; operational (including technology) and infrastructure risks; reputational risks; the risk that the Bank's risk management models may not take into account all relevant factors; the accuracy and completeness of information the Bank receives on customers and counterparties; the timely development and introduction of new products and services; the Bank's ability to expand existing distribution channels and to develop and realize revenues from new distribution channels; the Bank's ability to complete and integrate acquisitions and its other growth strategies; critical accounting estimates and the effects of changes in accounting policies and methods used by the Bank as described in the Bank's annual financial statements (See "Controls and Accounting Policies – Critical accounting estimates" in the Bank's 2017 Annual Report) and updated by quarterly reports; global capital markets activity; the Bank's ability to attract and retain key executives; reliance on third parties to provide components of the Bank's business infrastructure; unexpected changes in consumer spending and saving habits; technological developments; fraud by internal or external parties, including the use of new technologies in unprecedented ways to defraud the Bank or its customers; increasing cyber security risks which may include theft of assets, unauthorized access to sensitive information or operational disruption; anti-money laundering; consolidation in the financial services sector in Canada and globally; competition, both from new entrants and established competitors; judicial and regulatory proceedings; natural disasters, including, but not limited to, earthquakes and hurricanes, and disruptions to public infrastructure, such as transportation, communication, power or water supply; the possible impact of international conflicts and other developments, including terrorist activities and war; the effects of disease or illness on local, national or international economies; and the Bank's anticipation of and success in managing the risks implied by the foregoing. A substantial amount of the Bank's business involves making loans or otherwise committing resources to specific companies, industries or countries. Unforeseen events affecting such borrowers, industries or countries could have a material adverse effect on the Bank's financial results, businesses, financial condition or liquidity. These and other factors may cause the Bank's actual performance to differ materially from that contemplated by forward-looking statements. For more information, see the "Risk Management" section of the Bank's 2017 Annual Report.

Material economic assumptions underlying the forward-looking statements contained in this document are set out in the 2017 Annual Report under the headings "Outlook", as updated by quarterly reports. The "Outlook" sections are based on the Bank's views and the actual outcome is uncertain. Readers should consider the above-noted factors when reviewing these sections. The preceding list of factors is not exhaustive of all possible risk factors and other factors could also adversely affect the Bank's results. When relying on forward-looking statements to make decisions with respect to the Bank and its securities, investors and others should carefully consider the preceding factors, other uncertainties and potential events. The forward-looking statements contained in this document are presented for the purpose of assisting the holders of the Bank's securities and financial analysts in understanding the Bank's financial position and results of operations as at and for the periods ended on the dates presented, as well as the Bank's financial performance objectives, vision and strategic goals, and may not be appropriate for other purposes. Except as required by law, the Bank does not undertake to update any forward-looking statements, whether written or oral, that may be made from time to time by or on its behalf. Additional information relating to the Bank, including the Bank's Annual Information Form, can be located on the SEDAR website at [www.sedar.com](http://www.sedar.com) and on the EDGAR section of the SEC's website at [www.sec.gov](http://www.sec.gov).

November 28, 2017

## MANAGEMENT'S DISCUSSION & ANALYSIS

The Management's Discussion and Analysis (MD&A) is provided to enable readers to assess the Bank's financial condition and results of operations as at and for the year ended October 31, 2017. The MD&A should be read in conjunction with the Bank's 2017 Consolidated Financial Statements and Notes. This MD&A is dated November 28, 2017.

Additional information relating to the Bank, including the Bank's 2017 Annual Report, are available on the Bank's website at [www.scotiabank.com](http://www.scotiabank.com). As well, the Bank's 2017 Annual Report and Annual Information Form are available on the SEDAR website at [www.sedar.com](http://www.sedar.com) and on the EDGAR section of the SEC's website at [www.sec.gov](http://www.sec.gov).

### Non-GAAP Measures

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

#### T1 Adjusted diluted earnings per share

The adjusted diluted earnings per share is calculated as follows:

	2017		2016		2015	
	Diluted EPS <sup>(1)</sup>		Diluted EPS <sup>(1)</sup>		Diluted EPS <sup>(1)</sup>	
For the year ended October 31 (\$ millions)						
Net income attributable to common shareholders (diluted) (refer to Note 33)	\$ 7,935	\$ 6.49	\$ 7,070	\$ 5.77	\$ 6,983	\$ 5.67
2016 Restructuring charge	-	-	278	0.23	-	-
Net income attributable to common shareholders (diluted) adjusted for restructuring charge	7,935	6.49	7,348	6.00	6,983	5.67
Amortization of intangible assets, excluding software	60	0.05	76	0.05	65	0.05
Adjusted net income attributable to common shareholders (diluted)	\$ 7,995	\$ 6.54	\$ 7,424	\$ 6.05	\$ 7,048	\$ 5.72
Weighted average number of diluted common shares outstanding (millions)	1,223		1,226		1,232	

(1) Adjusted diluted earnings per share calculations are based on full dollar and share amounts.

#### T2 Impact of the 2016 restructuring charge

The table below reflects the impact of the 2016 restructuring charge of \$378 million pre-tax (\$278 million after tax)<sup>(1)</sup>.

For the year ended October 31, 2017 (\$ millions)	Reported	Impact of the 2016 restructuring charge	Adjusted for the restructuring charge
Operating leverage	2.4%	(2.6)%	(0.2)%

For the year ended October 31, 2016 (\$ millions)	Reported	Impact of the 2016 restructuring charge	Adjusted for the restructuring charge
Net income (\$ millions)	\$ 7,368	\$ 278	\$ 7,646
Diluted earnings per share	\$ 5.77	\$ 0.23	\$ 6.00
Return on equity	13.8%	0.5%	14.3%
Productivity ratio	55.2%	(1.5)%	53.7%
Operating leverage	(1.9)%	2.9%	1.0%

(1) Calculated using the statutory tax rates of the various jurisdictions.

### Core banking assets

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

### Core banking margin

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



### T3 Financial highlights

As at and for the years ended October 31	2017	2016	2015
<b>Operating results</b> (\$ millions)			
Net interest income	15,035	14,292	13,092
Non-interest income	12,120	12,058	10,957
Total revenue	27,155	26,350	24,049
Provision for credit losses	2,249	2,412	1,942
Non-interest expenses	14,630	14,540	13,041
Income tax expense	2,033	2,030	1,853
Net income	8,243	7,368	7,213
Net income attributable to common shareholders	7,876	6,987	6,897
<b>Operating performance</b>			
Basic earnings per share (\$)	6.55	5.80	5.70
Diluted earnings per share (\$)	6.49	5.77	5.67
Adjusted diluted earnings per share (\$) <sup>(1)(2)</sup>	6.54	6.05	5.72
Return on equity (%)	14.6	13.8	14.6
Productivity ratio (%)	53.9	55.2	54.2
Operating leverage (%)	2.4	(1.9)	(1.6)
Core banking margin (%) <sup>(1)</sup>	2.46	2.38	2.39
<b>Financial position information</b> (\$ millions)			
Cash and deposits with financial institutions	59,663	46,344	73,927
Trading assets	98,464	108,561	99,140
Loans	504,369	480,164	458,628
Total assets	915,273	896,266	856,497
Deposits	625,367	611,877	600,919
Common equity	55,454	52,657	49,085
Preferred shares and other equity instruments	4,579	3,594	2,934
Assets under administration	470,198	472,817	453,926
Assets under management	206,675	192,702	179,007
<b>Capital and liquidity measures</b>			
Common Equity Tier 1 (CET1) capital ratio (%)	11.5	11.0	10.3
Tier 1 capital ratio (%)	13.1	12.4	11.5
Total capital ratio (%)	14.9	14.6	13.4
Leverage ratio (%)	4.7	4.5	4.2
CET1 risk-weighted assets (\$ millions) <sup>(3)</sup>	376,379	364,048	357,995
Liquidity coverage ratio (LCR) (%)	125	127	124
<b>Credit quality</b>			
Net impaired loans (\$ millions) <sup>(4)</sup>	2,243	2,446	2,085
Allowance for credit losses (\$ millions)	4,327	4,626	4,197
Net impaired loans as a % of loans and acceptances <sup>(4)</sup>	0.43	0.49	0.44
Provision for credit losses as a % of average net loans and acceptances	0.45	0.50	0.43
<b>Common share information</b>			
Closing share price \$(TSX)	83.28	72.08	61.49
Shares outstanding (millions)			
Average – Basic	1,203	1,204	1,210
Average – Diluted	1,223	1,226	1,232
End of period	1,199	1,208	1,203
Dividends paid per share (\$)	3.05	2.88	2.72
Dividend yield (%) <sup>(5)</sup>	4.0	4.7	4.4
Market capitalization (\$ millions)(TSX)	99,872	87,065	73,969
Book value per common share (\$)	46.24	43.59	40.80
Market value to book value multiple	1.8	1.7	1.5
Price to earnings multiple (trailing 4 quarters)	12.7	12.4	10.8
<b>Other information</b>			
Employees	88,645	88,901	89,214
Branches and offices	3,003	3,113	3,177

(1) Refer to page 14 for a discussion of Non-GAAP measures.

(2) Refer to table T1 Adjusted diluted earnings per share.

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

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

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

## Overview of Performance

### Financial Results: 2017 vs 2016

The Bank's net income for the year was \$8,243 million, up 12% from \$7,368 million. Diluted earnings per share (EPS) were \$6.49 compared to \$5.77. Return on equity was 14.6% compared to 13.8%.

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

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

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

Non-interest income increased to \$12,120 million from \$12,058 million. Higher banking and credit card revenues were partly offset by lower trading revenues and lower fee and commission revenues due to the sale of HollisWealth business. Lower gain on sale of businesses in Canadian Banking, lower net gain on investment securities and the negative impact of foreign currency translation were partly offset by higher gains on sale of real estate.

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

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

The productivity ratio was 53.9% compared to 55.2%, or 53.7% adjusting for the impact of the restructuring charge last year. Operating leverage was positive 2.4%, or negative 0.2% adjusting for the restructuring charge.

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

The all-in Basel III Common Equity Tier 1 ratio was 11.5% as at October 31, 2017, compared to 11.0% last year, and remained well above the regulatory minimum.

### Medium-term financial objectives

	2017 Results	
	Reported	Adjusted <sup>(1)</sup>
Diluted earnings per share growth of 5-10%	12%	8%
Return on equity of 14%+	14.6%	14.6%
Achieve positive operating leverage	Positive 2.4%	Negative 0.2%
Maintain strong capital ratios	CET1 capital ratio of 11.5%	CET1 capital ratio of 11.5%

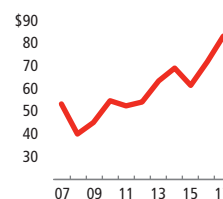
### Shareholder Returns

In fiscal 2017, the total shareholder return on the Bank's shares was 20.3%, which outperformed the 8.3% total return of the S&P/TSX Composite Index.

The total compound annual shareholder return on the Bank's shares over the past five years was 13.7%, and 9.0% over the past 10 years. This exceeded the total annual return of the S&P/TSX Composite Index, which was 8.4% over the past five years and 3.9% over the last 10 years.

Quarterly dividends were raised twice during the year – a two cent increase effective the second quarter and a further three cent increase effective in the fourth quarter. As a result, dividends per share totaled \$3.05 for the year, up 6% from 2016. The dividend payout ratio of 46.6% for the year was in line with the Bank's target payout range of 40-50%.

C1 Closing common share price as at October 31



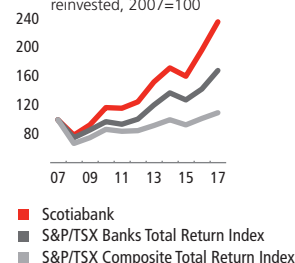
<sup>1</sup> Refer to Non-GAAP Measures on page 14.

**T4** Shareholder returns

For the years ended October 31	2017	2016	2015
Closing market price per common share (\$)	<b>83.28</b>	72.08	61.49
Dividends paid (\$ per share)	<b>3.05</b>	2.88	2.72
Dividend yield (%) <sup>(1)</sup>	<b>4.0</b>	4.7	4.4
Increase (decrease) in share price (%)	<b>15.5</b>	17.2	(10.9)
Total annual shareholder return (%) <sup>(2)</sup>	<b>20.3</b>	22.5	(7.0)

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

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

**C2** Return to common shareholders  
Share price appreciation plus dividends  
reinvested, 2007=100**Economic Outlook**

The sources of global growth are strengthening and diversifying, both within countries and across regions. This synchronized global recovery is contributing to a re-assessment of monetary policy prospects in a number of countries, with a shift in both tone and action from several major central banks as they prepare to follow the US Fed's lead and begin withdrawing exceptional stimulus measures. The Bank of Canada raised its overnight rate for the first time in nearly seven years in July 2017 and again in September, and the Bank of England followed earlier in November. The European Central Bank (ECB) and Bank of Japan are unlikely to change their policy stance in the near-term given weak inflation. While it is possible that this may increase volatility as markets digest the implications of reduced central bank support, this shift in stance from central bankers signals that global economic recovery is self-sustaining and less reliant on exceptional policy measures.

In Canada, GDP growth is now tracking to hit 3.1% in 2017. This is the highest annual growth rate since 2011 and puts Canada on track to be one of the fastest-growing countries in the industrialized world. As the US economy heads into the eighth year of its third-longest expansion on record, the fundamentals for continued solid growth remain in place, though any slack in the economy is rapidly closing.

In Latin America, economic growth is projected to substantially accelerate next year, but it is likely to be affected by political uncertainty stemming from looming presidential elections in Mexico, Chile, and Colombia, and political divisions in Peru. Similarly, investor support for Brazil will be intimately tied to the fate of the current government's reform program.

In the Eurozone, survey indicators are extremely strong: they imply that GDP growth should continue to accelerate throughout 2017 to an annual average growth rate of 2.3%, twice the currency area's potential growth rate. In contrast, the outlook for the UK has softened since earlier in the year and the headwinds to growth are expected to build through 2018.

The Chinese government will likely continue its sizeable fiscal injections to keep the economy's growth trajectory in line with the official growth target of "around 6.5%" in 2017; we expect output to expand by 6.7% this year and 6.3% in 2018 as the level of policy support fades.

**Impact of Foreign Currency Translation**

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

**T5** Impact of foreign currency translation

For the fiscal years	2017		2016		2015	
	Average exchange rate	% Change	Average exchange rate	% Change	Average exchange rate	% Change
U.S. Dollar/Canadian Dollar	<b>0.765</b>	<b>1.4%</b>	0.754	(6.4)%	0.806	(12.2)%
Mexican Peso/Canadian Dollar	<b>14.608</b>	<b>6.9%</b>	13.666	10.3%	12.386	2.8%
Peruvian Sol/Canadian Dollar	<b>2.513</b>	<b>(1.0)%</b>	2.539	1.3%	2.505	(3.0)%
Colombian Peso/Canadian Dollar	<b>2,265</b>	<b>(1.8)%</b>	2,307	10.8%	2,082	16.4%
Chilean Peso/Canadian Dollar	<b>500.108</b>	<b>(2.8)%</b>	514.549	0.5%	512.203	0.2%

Impact on net income <sup>(1)</sup> (\$ millions except EPS)	2017 vs. 2016	2016 vs. 2015	2015 vs. 2014
Net interest income	<b>\$ (112)</b>	\$ (51)	\$ 232
Non-interest income <sup>(2)</sup>	<b>(65)</b>	182	243
Non-interest expenses	<b>99</b>	86	(151)
Other items (net of tax)	<b>18</b>	(34)	(62)
Net income	<b>\$ (60)</b>	\$ 183	\$ 262
Earnings per share (diluted)	<b>\$ (0.05)</b>	\$ 0.15	\$ 0.21
<i>Impact by business line (\$ millions)</i>			
Canadian Banking	<b>\$ (4)</b>	\$ 14	\$ 20
International Banking <sup>(2)</sup>	<b>(14)</b>	44	84
Global Banking and Markets	<b>(12)</b>	65	110
Other <sup>(2)</sup>	<b>(30)</b>	60	48
	<b>\$ (60)</b>	\$ 183	\$ 262

(1) Includes impact of all currencies.

(2) Includes the impact of foreign currency hedges.

## GROUP FINANCIAL PERFORMANCE

### Net Income

Net income was \$8,243 million, up 12% compared to \$7,368 million last year. Last year's results included a restructuring charge of \$378 million pre-tax, or \$278 million after tax. Adjusting for the restructuring charge last year, net income increased \$597 million or 8%.

### Net Interest Income

Net interest income was \$15,035 million, an increase of \$743 million or 5% from the previous year. This increase was driven by a 2% growth in core banking assets and a 3% increase in the core banking margin.

Net interest income in Canadian Banking was up \$339 million or 5% driven by solid asset and deposit growth and an increase in margin. Net interest income increased \$367 million or 6% in International Banking due primarily to strong asset growth and improved margins. Global Banking and Markets net interest income rose \$43 million or 3%.

Core banking assets increased \$11 billion to \$609 billion. The increase was driven by strong growth in retail and commercial lending in Canadian Banking as well as International Banking. Partially offsetting were lower volumes of deposits with financial institutions, corporate loans in Global Banking and Markets and the negative impact of foreign currency translation.

The core banking margin improved eight basis points to 2.46%, driven by higher margins across all business lines.

### Outlook

Net interest income is expected to increase in 2018 driven by growth in core banking assets across all business lines and higher margins, partly offset by the unfavourable impact of foreign currency translation. The core banking margin is expected to benefit in a rising interest rate environment.

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

(\$ billions, except percentage amounts)	2017			2016			2015		
	Average balance	Interest	Average rate	Average balance	Interest	Average rate	Average balance	Interest	Average rate
Total average assets and net interest income	\$ 912.6	\$ 15.0		\$ 913.8	\$ 14.3		\$ 860.6	\$ 13.1	
Less: total assets in Capital Markets <sup>(1)</sup>	249.2	–		259.4	–		258.1	–	
Banking margin on average total assets	\$ 663.4	\$ 15.0	2.26%	\$ 654.4	\$ 14.3	2.18%	\$ 602.5	\$ 13.1	2.18%
Less: non-earning assets and customers' liability under acceptances	54.6			56.6			54.4		
<b>Core banking assets and margin</b>	<b>\$ 608.8</b>	<b>\$ 15.0</b>	<b>2.46%</b>	<b>\$ 597.8</b>	<b>\$ 14.3</b>	<b>2.38%</b>	<b>\$ 548.1</b>	<b>\$ 13.1</b>	<b>2.39%</b>

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

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

For the fiscal years (\$ billions)	2017			2016			2015		
	Average balance	Interest	Average rate	Average balance	Interest	Average rate	Average balance	Interest	Average rate
<b>Assets</b>									
Deposits with financial institutions	\$ 53.2	\$ 0.5	0.98%	\$ 67.8	\$ 0.4	0.58%	\$ 71.1	\$ 0.3	0.41%
Trading assets	107.2	0.1	0.13%	107.2	0.2	0.16%	111.2	0.2	0.17%
Securities purchased under resale agreements and securities borrowed	97.0	0.3	0.29%	99.8	0.1	0.16%	99.9	0.2	0.16%
Investment securities	74.8	1.3	1.68%	67.8	1.1	1.57%	43.7	0.7	1.69%
<b>Loans:</b>									
Residential mortgages	228.3	7.4	3.23%	218.6	7.4	3.37%	214.4	7.5	3.51%
Personal and credit cards	100.9	7.8	7.78%	96.8	7.3	7.57%	87.5	6.6	7.52%
Business and government	165.0	6.5	3.94%	161.4	5.5	3.41%	142.2	4.6	3.25%
Allowance for credit losses	(4.5)			(4.6)			(4.0)		
<b>Total loans</b>	<b>\$ 489.7</b>	<b>\$ 21.7</b>	<b>4.43%</b>	<b>\$ 472.2</b>	<b>\$ 20.2</b>	<b>4.28%</b>	<b>\$ 440.1</b>	<b>\$ 18.7</b>	<b>4.26%</b>
<b>Total earning assets</b>	<b>\$ 821.9</b>	<b>\$ 23.9</b>	<b>2.91%</b>	<b>\$ 814.8</b>	<b>\$ 22.0</b>	<b>2.70%</b>	<b>\$ 766.0</b>	<b>\$ 20.1</b>	<b>2.63%</b>
Customers' liability under acceptances	12.3			11.4			11.4		
Other assets	78.4			87.6			83.2		
<b>Total assets</b>	<b>\$ 912.6</b>	<b>\$ 23.9</b>	<b>2.62%</b>	<b>\$ 913.8</b>	<b>\$ 22.0</b>	<b>2.41%</b>	<b>\$ 860.6</b>	<b>\$ 20.1</b>	<b>2.34%</b>
<b>Liabilities and equity</b>									
<b>Deposits:</b>									
Personal	\$ 203.8	\$ 2.7	1.30%	\$ 195.1	\$ 2.4	1.22%	\$ 181.4	\$ 2.3	1.27%
Business and government	374.7	4.7	1.26%	384.7	3.9	1.01%	368.1	3.4	0.91%
Financial institutions	42.1	0.5	1.23%	42.8	0.4	1.03%	37.3	0.3	0.85%
<b>Total deposits</b>	<b>\$ 620.6</b>	<b>\$ 7.9</b>	<b>1.27%</b>	<b>\$ 622.6</b>	<b>\$ 6.7</b>	<b>1.08%</b>	<b>\$ 586.8</b>	<b>\$ 6.0</b>	<b>1.02%</b>
Obligations related to securities sold under repurchase agreements and securities lent	102.3	0.2	0.21%	99.1	0.2	0.19%	90.7	0.2	0.26%
Subordinated debentures	7.1	0.2	3.19%	7.5	0.2	3.10%	5.6	0.2	3.33%
Other interest-bearing liabilities	58.5	0.6	0.99%	54.9	0.6	1.04%	50.1	0.6	1.20%
<b>Total interest-bearing liabilities</b>	<b>\$ 788.5</b>	<b>\$ 8.9</b>	<b>1.13%</b>	<b>\$ 784.1</b>	<b>\$ 7.7</b>	<b>0.98%</b>	<b>\$ 733.2</b>	<b>\$ 7.0</b>	<b>0.96%</b>
Other liabilities including acceptances	65.3			74.4			75.9		
Equity <sup>(2)</sup>	58.8			55.3			51.5		
<b>Total liabilities and equity</b>	<b>\$ 912.6</b>	<b>\$ 8.9</b>	<b>0.97%</b>	<b>\$ 913.8</b>	<b>\$ 7.7</b>	<b>0.84%</b>	<b>\$ 860.6</b>	<b>\$ 7.0</b>	<b>0.81%</b>
<b>Net interest income</b>		<b>\$ 15.0</b>			<b>\$ 14.3</b>			<b>\$ 13.1</b>	

(1) Average of daily balances.

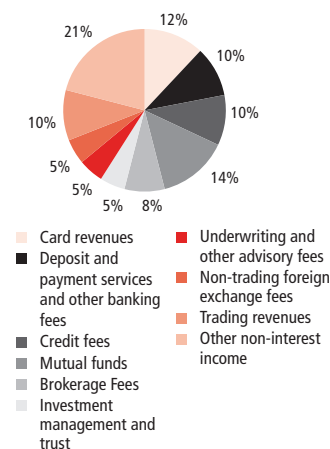
(2) Includes non-controlling interests of \$1.6 in 2017, \$1.5 in 2016 and \$1.3 in 2015.

**Non-Interest Income**

**T8** Non-interest income

For the fiscal years (\$ millions)	2017	2016	2015	2017 versus 2016
<b>Banking</b>				
Card revenues	\$ 1,514	\$ 1,359	\$ 1,089	11%
Deposit and payment services				
Deposit services	989	949	928	4
Other payment services	335	330	307	2
	1,324	1,279	1,235	4
Credit fees				
Commitment and other credit fees	846	870	787	(3)
Acceptance fees	307	284	266	8
	1,153	1,154	1,053	–
Other	472	436	406	8
	\$ 4,463	\$ 4,228	\$ 3,783	6%
Banking fee related expenses	608	559	423	9
Total banking	\$ 3,855	\$ 3,669	\$ 3,360	5%
<b>Wealth management</b>				
Mutual funds	\$ 1,639	\$ 1,624	\$ 1,619	1%
Brokerage fees	1,021	1,010	1,006	1
Investment management and trust				
Investment management and custody	453	443	440	2
Personal and corporate trust	205	205	204	–
	658	648	644	2
Total wealth management	\$ 3,318	\$ 3,282	\$ 3,269	1%
Underwriting and other advisory	598	594	525	1
Non-trading foreign exchange	557	540	492	3
Trading revenues	1,259	1,403	1,185	(10)
Net gain on investment securities	380	534	639	(29)
Net income from investments in associated corporations	407	414	405	(2)
Insurance underwriting income, net of claims	626	603	556	4
Other	1,120	1,019	526	10
Total non-interest income	\$12,120	\$12,058	\$10,957	1%

**C3** Sources of non-interest income



Non-interest income was \$12,120 million, up \$62 million or 1%, primarily from growth in banking, wealth management and insurance, partly offset by lower trading revenues, lower net gain on sale of businesses and the negative impact of foreign currency translation. Higher gains on sales of real estate were more than offset by lower net gain on investment securities.

Banking revenues, excluding related expenses, grew \$235 million or 6% to \$4,463 million reflecting strong growth in card revenues from higher fees in Canadian Banking and International Banking. Fees from deposit and payment services were up \$45 million or 4%, mostly in Canadian Banking. Banking fee related expenses rose \$49 million or 9%, primarily due to credit card expenses driven by higher transaction volumes.

Wealth management revenues increased \$36 million or 1% to \$3,318 million due primarily to higher fee-based brokerage and mutual fund revenues, partly offset by the impact of the sale of the HollisWealth business.

Trading revenues of \$1,259 million were lower by \$144 million or 10% from the prior year, primarily due to lower revenues in the equity, fixed income and commodities businesses.

Insurance underwriting income was up \$23 million or 4% year over year, mostly from strong business growth in the Canadian market.

Other income was \$1,120 million, up \$101 million due primarily to higher gains on sale of real estate, partly offset by lower gain on sale of businesses.

**Outlook**

Non-interest income in 2018 is expected to benefit from higher credit card revenues, banking fees and trading revenues, while gains on investment securities and real estate sales are expected to be lower.

**T9** Trading revenues

For the fiscal years (\$ millions)	2017	2016	2015
By trading products:			
Interest rate and credit	\$ 575	\$ 613	\$ 400
Equities	47	101	177
Commodities	295	376	345
Foreign exchange	250	262	201
Other	92	51	62
Total trading revenues	\$ 1,259	\$ 1,403	\$ 1,185
% of total revenues	4.6%	5.3%	4.9%

**Provision for Credit Losses**

Provision for credit losses was \$2,249 million, down \$163 million from last year due primarily to lower provisions related to energy exposures and the impact of last year's increase in the collective allowance against performing loans of \$50 million. The provision for credit losses ratio was 45 basis points compared to 50 basis points in the prior year.

The provision for credit losses in Canadian Banking was \$913 million, an increase of \$81 million due to higher provisions in retail portfolios, primarily in credit cards and lines of credit. The provision for credit losses ratio was 29 basis points in Canadian Banking, in line with the prior year.

The provision for credit losses in International Banking increased \$13 million to \$1,294 million. Retail provision increases in Colombia, Chile, Uruguay and Peru were partly offset by lower provisions in Mexico and the Caribbean and Central America. Commercial provisions were lower in Colombia, the Caribbean, and Mexico, and were partly offset by higher provisions, primarily in Chile and Central America. Overall, the provision for credit losses ratio improved five basis points to 1.21%.

The provision for credit losses in Global Banking and Markets decreased \$207 million to \$42 million due primarily to higher energy sector provisions last year. The provision for credit losses ratio was five basis points, down 25 basis points from last year.

The collective allowance against performing loans of \$1,562 million, held in the Other segment, remained unchanged. An increase in the allowance for exposures related to recent hurricanes in the Caribbean and Puerto Rico, was offset by a reduction in the amount held against energy exposures.

**Outlook**

The quality of the Bank's credit portfolio is expected to remain strong given its broad global diversification. The total provision for credit losses is expected to increase in 2018 mostly due to higher provisions attributable to performing loans under IFRS 9 accounting standards. We also expect greater volatility from implementation of the new accounting standards. However, underlying performance remains strong, and in Canadian Banking, retail and commercial credit quality is expected to remain stable. In International Banking, the retail provision for credit losses is expected to rise due mainly to lower acquisition-related benefits and seasoning of unsecured growth in 2017, while commercial credit quality is expected to remain stable. In Global Banking and Markets, the credit quality is expected to improve slightly.

**T10** Provisions against impaired loans by business line

For the fiscal years (\$ millions)	2017	2016	2015
<b>Canadian Banking</b>			
Retail	\$ 857	\$ 770	\$ 642
Commercial	56	62	45
	\$ 913	\$ 832	\$ 687
<b>International Banking</b>			
Caribbean and Central America	\$ 215	\$ 250	\$ 184
Latin America			
Mexico	193	224	260
Peru	329	317	265
Chile	145	112	108
Colombia	337	320	247
Other Latin America	75	58	64
Total Latin America	1,079	1,031	944
	\$ 1,294	\$ 1,281	\$ 1,128
<b>Global Banking and Markets</b>			
Canada	\$ (6)	\$ 43	\$ 42
U.S.	(15)	113	4
Asia and Europe	63	93	21
	\$ 42	\$ 249	\$ 67
Total	\$ 2,249	\$ 2,362	\$ 1,882

**T11** Provision for credit losses as a percentage of average net loans and acceptances

For the fiscal years (%)	2017	2016	2015
<b>Canadian Banking</b>			
Retail	<b>0.32%</b>	0.29%	0.25%
Commercial	<b>0.13</b>	0.15	0.12
	<b>0.29</b>	0.28	0.23
<b>International Banking</b>			
Retail	<b>2.09</b>	2.08	2.33
Commercial	<b>0.37</b>	0.52	0.26
	<b>1.21</b>	1.26	1.24
<b>Global Banking and Markets</b>	<b>0.05</b>	0.30	0.10
Provisions against impaired loans	<b>0.45</b>	0.49	0.42
Provisions against performing loans	<b>-</b>	0.01	0.01
<b>Total</b>	<b>0.45%</b>	0.50%	0.43%

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

For the fiscal years (%)	2017	2016	2015
<b>Canadian Banking</b>			
Retail	<b>0.34%</b>	0.26%	0.26%
Commercial	<b>0.18</b>	0.16	0.20
	<b>0.32</b>	0.24	0.25
<b>International Banking</b>			
Retail	<b>2.17</b>	1.90	1.99
Commercial	<b>0.50</b>	0.31	0.30
	<b>1.31</b>	1.06	1.10
<b>Global Banking and Markets</b>	<b>0.11</b>	0.21	0.01
<b>Total</b>	<b>0.50%</b>	0.41%	0.39%

(1) Write-offs net of recoveries.

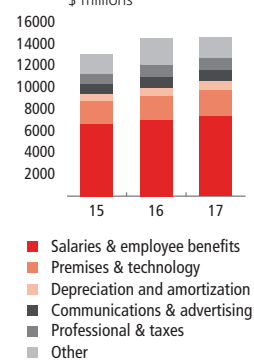


## Non-Interest Expenses

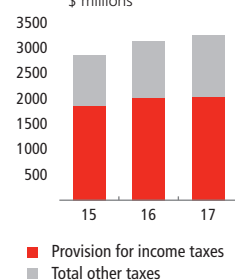
### T13 Non-interest expenses and productivity

For the fiscal years (\$ millions)	2017	2016	2015	2017 versus 2016
<b>Salaries and employee benefits</b>				
Salaries	\$ 4,220	\$ 4,071	\$ 4,019	4%
Performance-based compensation	1,599	1,538	1,438	4
Share-based payments	209	243	220	(14)
Other employee benefits	1,347	1,173	1,004	15
	<b>\$ 7,375</b>	<b>\$ 7,025</b>	<b>\$ 6,681</b>	<b>5%</b>
<b>Premises and technology</b>				
Premises				
Occupancy	444	428	433	4
Property taxes	93	89	89	4
Other premises costs	432	431	421	-
	<b>\$ 969</b>	<b>\$ 948</b>	<b>\$ 943</b>	<b>2%</b>
Technology	<b>\$ 1,467</b>	<b>\$ 1,290</b>	<b>\$ 1,143</b>	<b>14%</b>
	<b>\$ 2,436</b>	<b>\$ 2,238</b>	<b>\$ 2,086</b>	<b>9%</b>
<b>Depreciation and amortization</b>				
Depreciation	340	325	303	5
Amortization of intangible assets	421	359	281	17
	<b>\$ 761</b>	<b>\$ 684</b>	<b>\$ 584</b>	<b>11%</b>
<b>Communications</b>	<b>\$ 437</b>	<b>\$ 442</b>	<b>\$ 434</b>	<b>(1)%</b>
<b>Advertising and business development</b>	<b>\$ 581</b>	<b>\$ 617</b>	<b>\$ 592</b>	<b>(6)%</b>
<b>Professional</b>	<b>\$ 775</b>	<b>\$ 693</b>	<b>\$ 548</b>	<b>12%</b>
<b>Business and capital taxes</b>				
Business taxes	383	356	319	8
Capital taxes	40	47	42	(15)
	<b>\$ 423</b>	<b>\$ 403</b>	<b>\$ 361</b>	<b>5%</b>
<b>Other</b>	<b>\$ 1,842</b>	<b>\$ 2,438</b>	<b>\$ 1,755</b>	<b>(24)%</b>
Total non-interest expenses	<b>\$ 14,630</b>	<b>\$ 14,540</b>	<b>\$ 13,041</b>	<b>1%</b>
Productivity ratio	<b>53.9%</b>	<b>55.2%</b>	<b>54.2%</b>	

C4 Non-interest expenses  
\$ millions



C5 Direct and indirect taxes  
\$ millions



## MANAGEMENT'S DISCUSSION AND ANALYSIS

Non-interest expenses were \$14,630 million, an increase of \$90 million or 1%. Adjusting for the impact of the prior year's restructuring charge of \$378 million, non-interest expenses increased by \$468 million or 3%.

The increase was due mostly to higher technology costs, professional fees and software amortization. As well, there were increases in employee costs, including benefit expenses and performance-based compensation, higher business taxes, and the impact of acquisitions. These were partly offset by the positive impact of foreign currency translation and the impact of the sale of HollisWealth.

The Bank's total technology cost, that includes Technology expenses in Table T13 and those included within Salaries, Professional, Amortization of intangible assets and Depreciation, amounted to \$3.1 billion, an increase of 14% from \$2.7 billion incurred in 2016. This increase reflects the Bank's investment in its digital transformation and technology modernization efforts. The Bank achieved savings of approximately \$500 million in 2017 arising from cost-reduction initiatives relating to the 2016 restructuring charge. The Bank's strategy to reduce structural costs will lead to productivity gains and partially fund these larger technology investments.

The productivity ratio was 53.9% compared to 55.2%, or 53.7% adjusting for last year's restructuring charge.

Operating leverage was positive 2.4%, or negative 0.2% adjusting for the restructuring charge.

### Outlook

Non-interest expenses are expected to rise in 2018. This is driven by business growth and ongoing strategic and technology investments. The growth will be partly offset by further savings from structural cost reduction initiatives.

### Income Taxes

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

### Outlook

The Bank's consolidated effective tax rate is expected to be in the range of 22% to 25% in 2018.

## Financial Results Review: 2016 vs. 2015

In order to identify key business trends between 2016 and 2015, commentary and the related financial results are below.

### Net income

The Bank had net income of \$7,368 million in 2016, up 2% from \$7,213 million in 2015. Diluted earnings per share (EPS) were \$5.77 compared to \$5.67 in 2015. Return on equity was 13.8% in 2016 compared to 14.6% in 2015.

The Bank recorded a restructuring charge of \$378 million pre-tax, or \$278 million after tax, in 2016 (refer T2). Adjusting for the restructuring charge, net income was \$7,646 million and diluted earnings per share was \$6.00, up 6% compared to 2015. Return on equity was 14.3% on an adjusted basis compared to 14.6% in 2015.

The 2016 net income was positively impacted by increases in net interest income and non-interest income, as well as acquisitions and the favourable impact of foreign currency translation. Partially offsetting were higher provision for credit losses, non-interest expenses and income taxes. The 2015 net income was positively impacted by an increase in net interest income, the favourable impact of foreign currency translation and lower income taxes. Mostly offsetting these positive impacts were higher provision for credit losses and higher non-interest expenses. The 2015 net income included the following, largely offsetting items, comprised of a reduction in the pension benefit accrual related to modifications made to the Bank's main pension plan of \$204 million pre-tax (\$151 million after tax; approximately 3% of the pension liability), an increase to the collective allowance against performing loans of \$60 million pre-tax (\$44 million after tax) to support the growing loan portfolio, and reorganization costs related to the consolidation of Canadian shared services operations of \$61 million pre-tax (\$45 million after tax). These items were recorded in the Other segment.

### Net interest income

Net interest income increased \$1,200 million or 9% to \$14,292 million in 2016, driven by growth in core banking assets across all business lines and acquisitions. The core banking margin was 2.38%, down one basis point from 2015.

### Non-interest income

Non-interest income increased \$1,101 million or 10% to \$12,058 million in 2016. Strong growth in banking and trading revenues, acquisitions and the favourable impact of foreign currency translation contributed to the increase. Also contributing to the increase in 2016 was a gain on sale of a non-core lease financing business in Canada, while gains on sale of real estate in 2016 were largely offset by lower net gains on investment securities. In 2015, increases in wealth management and banking revenues and the positive impact of foreign currency translation were partly offset by lower underwriting and advisory fees and lower net gain on investment securities.

### Provision for credit losses

The total provision for credit losses was \$2,412 million in 2016, up \$470 million from 2015, and net of acquisition-related benefits of \$152 million. Contributing to this increase were higher provisions related to energy exposures in Global Banking and Markets, higher commercial provisions in International Banking, and higher retail provisions in Canadian Banking, primarily in credit cards and automotive loans, generally in line with volume growth. Partially offsetting were higher acquisition-related benefits this year. The 2016 provision for credit losses included a \$50 million increase in the collective allowance against performing loans compared to an increase of \$60 million in 2015.

### Non-interest expenses

Non-interest expenses were \$14,540 million in 2016, an increase of \$1,499 million or 11% over 2015. Adjusting for the restructuring charge (refer T2), expenses increased 9%. The increase reflects the impact of acquisitions, higher performance-based compensation, as well as higher business initiative and volume-driven costs including technology and professional fees, software amortization, and deposit insurance. As well, there were higher employee pension and benefit expenses as 2015 benefited from lower pension benefit costs related to modifications made to the Bank's main pension plan. These were partly offset by net savings of \$55 million realized from structural cost reduction initiatives related to the 2016 restructuring charge, as well as the reorganization cost incurred in 2015. Operating leverage was negative 1.9% on a reported basis, or positive 1.0% adjusting for the restructuring charge (refer T2).

### Income taxes

The provision for income taxes was \$2,030 million, an increase of \$177 million from 2015. The Bank's overall effective tax rate for 2016 was 21.6% compared to 20.4% in 2015. The increase in the effective tax rate was due primarily to lower tax-exempt income and higher taxes in foreign jurisdictions in 2016.

### T14 Financial Results Review

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

(1) Taxable equivalent basis. Refer to Glossary.

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

## MANAGEMENT'S DISCUSSION AND ANALYSIS

For the year ended October 31, 2015 (\$ millions) <sup>(1)</sup>	Canadian Banking	International Banking	Global Banking and Markets	Other <sup>(2)</sup>	Total
Net interest income	\$ 6,415	\$ 5,706	\$ 1,071	\$ (100)	<b>\$ 13,092</b>
Non-interest income	4,832	3,137	2,953	35	<b>10,957</b>
Total revenue	\$ 11,247	\$ 8,843	\$ 4,024	\$ (65)	<b>\$ 24,049</b>
Provision for credit losses	687	1,128	67	60	<b>1,942</b>
Non-interest expenses	6,014	5,095	1,846	86	<b>13,041</b>
Income tax expense	1,202	568	558	(475)	<b>1,853</b>
Net income	\$ 3,344	\$ 2,052	\$ 1,553	\$ 264	<b>\$ 7,213</b>
Net income attributable to non-controlling interests	–	199	–	–	<b>199</b>
Net income attributable to equity holders of the Bank	\$ 3,344	\$ 1,853	\$ 1,553	\$ 264	<b>\$ 7,014</b>

(1) Taxable equivalent basis. Refer to Glossary.

(2) Includes all other smaller operating segments, including Group Treasury, and corporate adjustments, such as the elimination of the tax-exempt income gross-up reported in net interest income, non-interest income and provision for income taxes for the year ended October 31, 2015 – \$390 to arrive at the amounts reported in Consolidated Statement of income, and differences in the actual amount of costs incurred and charged to the operating segments.

## Fourth Quarter Review

### T15 Fourth quarter financial results

(\$ millions)	For the three months ended		
	October 31 2017	July 31 2017	October 31 2016
Net interest income	\$ 3,831	\$ 3,833	\$ 3,653
Non-interest income	2,981	3,061	3,098
Total revenue	\$ 6,812	\$ 6,894	\$ 6,751
Provision for credit losses	536	573	550
Non-interest expenses	3,668	3,672	3,650
Income tax expense	538	546	540
Net income	\$ 2,070	\$ 2,103	\$ 2,011
Net income attributable to non-controlling interests in subsidiaries	\$ 55	\$ 58	\$ 72
Net income attributable to equity holders of the Bank	\$ 2,015	\$ 2,045	\$ 1,939
Preferred shareholders and other equity instrument holders	29	29	31
Common shareholders	\$ 1,986	\$ 2,016	\$ 1,908

#### Net income

##### Q4 2017 vs Q4 2016

Net income was \$2,070 million, an increase of \$59 million or 3%. Asset growth and an improved net interest margin, a lower provision for credit losses and a lower effective tax rate were partly offset by a decline in non-interest income.

##### Q4 2017 vs Q3 2017

Net income was \$2,070 million, a decrease of \$33 million or 2%, due primarily to the negative impact of foreign currency translation. Lower non-interest income was partly offset by lower provision for credit losses.

#### Net interest income

##### Q4 2017 vs Q4 2016

Net interest income was \$3,831 million, an increase of \$178 million or 5%. Adjusting for the negative impact of foreign currency translation, net interest income grew by 7%. The increase was attributable to asset growth in retail and commercial lending in Canadian Banking and International Banking, as well as higher core banking margin.

The core banking margin improved four basis points to 2.44%, driven by higher margins in Global Banking and Markets and Canadian Banking, partly offset by lower margins in International Banking.

##### Q4 2017 vs Q3 2017

Net interest income was \$3,831 million, a decrease of \$2 million. Adjusting for the negative impact of foreign currency translation, net interest income grew by 2%. Growth in retail and commercial lending in Canadian Banking was partly offset by the impact of lower margin.

The core banking margin of 2.44% was down two basis points, mainly from lower margins in International Banking, partly offset by higher margins in Global Banking and Markets.

#### Non-interest income

##### Q4 2017 vs Q4 2016

Non-interest income of \$2,981 million was down \$117 million or 4%. This was due mainly to lower trading revenues, lower fee and commission revenue due to the sale of HollisWealth business ("Sale of business") and lower gains on sale of real estate. Partly offsetting were higher card revenues, higher net gain on investment securities, and the gain on Sale of business.

##### Q4 2017 vs Q3 2017

Non-interest income was \$2,981 million, down \$80 million or 3%. Half of the decrease was due to the negative impact of foreign currency translation. The remaining decrease was due to lower fee and commission revenue due to the Sale of business, lower banking fees and trading revenues, and lower gains on sale of real estate. Partly offsetting were higher net gains on investment securities, and the gain on Sale of business.

#### Provision for credit losses

##### Q4 2017 vs Q4 2016

The provision for credit losses was \$536 million, down \$14 million. The decrease was due primarily to lower provisions in Global Banking and Markets, partly offset by higher provisions in International Banking. The collective allowance against performing loans of \$1,562 million, held in the Other segment, remained unchanged. An increase in the allowance for exposures related to recent hurricanes in the Caribbean was primarily offset by a reduction in the amount held against energy exposures. The provision for credit losses ratio improved three basis points to 42 basis points.

##### Q4 2017 vs Q3 2017

The provision for credit losses was \$536 million, a decline of \$37 million. The decrease was due primarily to lower provisions in Global Banking and Markets and lower retail provisions. The provision for credit losses ratio improved three basis points to 42 basis points.

Non-interest expenses

Q4 2017 vs Q4 2016

Non-interest expenses were \$3,668 million, up 1%, primarily reflecting investments in technology, digital banking and other initiatives and higher employee pension and benefit costs. The growth was partly offset by savings from cost-reduction initiatives, the impact of the Sale of business and the positive impact of foreign currency translation.

The productivity ratio was 53.8% compared to 54.1%.

Q4 2017 vs Q3 2017

Non-interest expenses were in line with last quarter or up 2% adjusting for the positive impact of foreign currency translation. Higher technology, professional and marketing expenses were partly offset by decreases from the impact of the Sale of business, as well as lower employee benefit and shared-based compensation expenses.

The productivity ratio was 53.8% compared to 53.3%.

Income taxes

Q4 2017 vs Q4 2016

The effective tax rate was 20.6% compared to 21.2% due primarily to higher tax-exempt income and lower taxes on the gain on Sale of business.

Q4 2017 vs Q3 2017

The effective tax rate was in line with the prior quarter. Higher taxes in foreign jurisdictions and lower tax-exempt income in the quarter were offset by lower taxes on the gain on Sale of business.

## Trending Analysis

### T16 Quarterly financial highlights

(\$ millions)	For the three months ended							
	October 31 2017	July 31 2017	April 30 2017	January 31 2017	October 31 2016	July 31 2016	April 30 2016	January 31 2016
Net interest income	\$ 3,831	\$ 3,833	\$ 3,728	\$ 3,643	\$ 3,653	\$ 3,602	\$ 3,518	\$ 3,519
Non-interest income	2,981	3,061	2,853	3,225	3,098	3,038	3,076	2,846
Total revenue	\$ 6,812	\$ 6,894	\$ 6,581	\$ 6,868	\$ 6,751	\$ 6,640	\$ 6,594	\$ 6,365
Provision for credit losses	536	573	587	553	550	571	752	539
Non-interest expenses	3,668	3,672	3,601	3,689	3,650	3,505	3,817	3,568
Income tax expense	538	546	332	617	540	605	441	444
Net income	\$ 2,070	\$ 2,103	\$ 2,061	\$ 2,009	\$ 2,011	\$ 1,959	\$ 1,584	\$ 1,814
Basic earnings per share (\$)	1.66	1.68	1.63	1.58	1.58	1.55	1.24	1.44
Diluted earnings per share (\$)	1.64	1.66	1.62	1.57	1.57	1.54	1.23	1.43

#### Net income

The Bank recorded strong net income over the past eight quarters, with earnings generally trending upwards over the period. The second quarter of 2016 was impacted by a restructuring charge of \$278 million (\$378 million pre-tax).

#### Net interest income

Net interest income generally increased over the period, driven by steady growth in retail and commercial loans in both Canadian and International Banking, as well as corporate loans in Global Banking and Markets. Additionally, the average balance of low-spread deposits with banks has declined over the period. The margin has remained solid, with moderate increases in most periods. The margin was 2.44% this quarter, down two basis points from the prior quarter mainly from lower margins in International Banking driven by asset mix changes and lower inflation, partly offset by wider margins in Global Banking and Markets. The second quarter of 2017 experienced a 14 basis point increase to 2.54% driven by improved margins in International Banking mainly reflecting business mix changes and Central Bank rate changes, as well as higher contributions from asset/liability management activities. The margin decreased to 2.46% in the third quarter of 2017, due mainly to asset mix changes in International Banking.

#### Non-interest income

Non-interest income increased in most quarters over the period. Banking revenues trended upward from growth in card fees in Canadian and International Banking. Wealth management fees were also strong over the period, but decreased this quarter due to the sale of HollisWealth. Trading revenues were generally strong over the period, but declined in the second quarter of 2017 due to lower trading revenues in the equities and fixed income businesses. The lower net gain on investment securities in 2017 compared to the prior year was partly offset by higher gains on sale of real estate. The gain on Sale of business this quarter was lower than the gain on disposition of a non-core lease finance business in Canadian Banking in the second quarter of 2016.

#### Provision for credit losses

Provision for credit losses has remained relatively stable over the period, but peaked in the second quarter of 2016 due primarily to provisions against exposures in the energy sector and an increase of \$50 million in the collective allowance against performing loans. Asset quality has remained strong over the period despite increased lending activity.

#### Non-interest expenses

Non-interest expenses have generally trended upwards over the period, mostly to support business growth and the Bank's investments in strategic initiatives and in technology. There have also been increases in performance-based compensation and employee-related benefits over the period. The second quarter of 2016 included a restructuring charge of \$378 million.

#### Income taxes

The effective tax rate was 20.6% this quarter and averaged 20.6% over the period, with a range of 13.9% to 23.6%. In the second quarter of 2017, the tax rate was 13.9% reflecting a higher amount of tax-exempt dividends related to client driven equity trading activities. Effective tax rates in other quarters were impacted by different levels of income earned in foreign tax jurisdictions, as well as the variability of tax-exempt dividend income.

## BUSINESS LINE OVERVIEW

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

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

Below are the results of the Bank's three business operating segments for 2017.

### CANADIAN BANKING

Canadian Banking reported net income to equity holders of \$4,064 million in 2017, up 9% from last year. This year's gain on sale of HollisWealth, a wealth management business, was lower than last year's gain on sale of a non-core lease financing business (collectively, "gain on sale of businesses"). The higher gains on sale of real estate offset by the lower gain on sale of businesses this year, positively impacted net income growth by 2%.

Solid growth in assets and deposits, along with improving margin driven primarily from the recent Bank of Canada interest rate increase and higher non-interest income contributed to strong growth in 2017. Revenue growth was partially offset by higher provision for credit losses and non-interest expenses. Return on equity was 22.8%, compared with 22.0% last year.

### INTERNATIONAL BANKING

International Banking reported net income attributable to equity holders of \$2,390 million, up \$311 million or 15% from last year. The increase reflects higher net interest income and fees driven by good loan growth, lower commercial provisions for credit losses and the benefits of cost-reduction initiatives. This was partly offset by higher income taxes and the negative impact of foreign currency translation. Return on equity was 14.7% compared to 12.8% last year.

### GLOBAL BANKING AND MARKETS

Global Banking and Markets reported net income attributable to equity holders of \$1,818 million, an increase of \$247 million or 16% from last year. Stronger results in the equities business, as well as lower provision for credit losses, were partly offset by higher expenses. Return on equity was 16.0% compared to 12.6% last year.

### KEY PERFORMANCE INDICATORS FOR ALL BUSINESS LINES

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

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

#### T17 2017 Financial performance

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

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

(2) Taxable equivalent basis. Refer to Glossary.

(3) Refer to Glossary.



# Canadian Banking

## 2017 Achievements

- **Customer Focus** - Deliver an excellent customer experience across our businesses and channels.
  - Completed the roll-out of Customer Pulse (rebranded from Net Promoter System) across our retail channels, our proprietary customer experience system, in Canada and have received over 1 million customer survey responses to date.
  - Continued our branch transformation roll out, delivering new roles, processes, and tools to more than half of our branches.
  - Tangerine achieved the highest customer satisfaction among mid-sized banks for the sixth straight year in the 2017 J.D. Power Canadian Retail Banking Customer Satisfaction Study.
  - Scotiabank received 8 Best Banking Awards by Ipsos in 2017.
  - Expanded our partnership with Maple Leaf Sports and Entertainment – we will continue to be the official sponsor of the Toronto Maple Leafs, as well as a partner of the MLSE Foundation. In July 2018, the Air Canada Centre will be renamed the Scotiabank Arena.
  - Scotiabank iTRADE selected by MoneySense Magazine as a Top 3 pick in best online brokerages in Canada.
- **Structural Cost Transformation** - Reduce structural costs to build the capacity to invest in our businesses and technology.
  - Exceeded this year's structural cost reduction, productivity ratio, and operating leverage targets.
  - Delivered positive operating leverage.
- **Digital Transformation** - Enhance our digital offering and e-commerce capabilities to drive digital sales and engagement.
  - Launched the flagship Digital Factory in Toronto to drive our digital products, applications and services as we increase the percentage of digital sales, reduce the percentage of transactions made in branches, and increase the proportion of customers adopting digital channels.
  - Ranked 1st by J.D. Power among Big 5 peers in mobile satisfaction and performance.
  - Developed a new on-boarding engine that strengthen controls, and provides a seamless onboarding experience for our customers by allowing instant Know Your Customer for credit cards, Day-to-Day and Small Business customers.
- **Business Mix Alignment** - Optimize our business mix by growing higher margin assets, building core deposits, and earning higher fee income.
  - As we focus on strengthening our credit card portfolio, we were awarded by MoneySense Magazine as having the best rewards, cashback, and student credit card offerings, solidifying our position as the "Bank of Rewards" with market leading offerings.
  - Launched the MomentumPlus Savings Account, an innovative solution that allows customers to save for multiple goals in one account, as we continue to focus on core deposits.
  - Successfully piloted a virtual Small Business Advisor role to capitalize on significant growth opportunities in this segment.
  - Completed sale of HollisWealth to refocus efforts as we continue to actively manage our businesses.

## Business Profile

Canadian Banking provides a full suite of financial advice and banking solutions, supported by an excellent customer experience, to over 10 million Retail, Small Business, Commercial Banking, and Wealth Management customers. It serves these customers through its network of 963 branches and more than 3,600 automated banking machines (ABMs), as well as internet, mobile and telephone banking and specialized sales teams. Canadian Banking also provides an alternative self-directed banking solution to over two million Tangerine Bank customers. Canadian Banking is comprised of the following areas:

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

## Strategy

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

## 2018 Priorities

- **Customer focus:** Deliver a leading customer experience and deepen relationships with customers across our businesses and channels.
- **Structural cost transformation:** Reduce structural costs to build the capacity to invest in our businesses and technology to drive shareholder return.
- **Digital transformation:** Leverage digital as the foundation of all our activities to improve our operations, enhance the client experience, and drive digital sales.
- **Business mix alignment:** Optimize our business mix by growing higher margin assets, building core deposits, and earning higher fee income.
- **Leadership:** Grow and diversify talent and engage employees through a performance-focused culture.

MANAGEMENT'S DISCUSSION AND ANALYSIS

**T18** Canadian Banking financial performance

(\$ millions)	2017	2016	2015
Net interest income <sup>(1)</sup>	\$ 7,363	\$ 7,024	\$ 6,415
Non-interest income <sup>(1)(2)</sup>	5,488	5,164	4,832
Total revenue <sup>(1)</sup>	12,851	12,188	11,247
Provision for credit losses	913	832	687
Non-interest expenses	6,487	6,324	6,014
Income tax expense	1,387	1,296	1,202
Net income	\$ 4,064	\$ 3,736	\$ 3,344
Net income attributable to non-controlling interests	-	-	-
Net income attributable to equity holders of the Bank	\$ 4,064	\$ 3,736	\$ 3,344
<b>Key ratios</b>			
Return on equity <sup>(3)</sup>	22.8%	22.0%	21.0%
Productivity <sup>(1)</sup>	50.5%	51.9%	53.5%
Net interest margin <sup>(4)</sup>	2.40%	2.38%	2.23%
Provision for credit losses as a percentage of loans and acceptances	0.29%	0.28%	0.23%
<b>Selected Consolidated Statement of Financial Position data (average balances)</b>			
Earning assets	\$ 315,916	\$ 302,648	\$ 293,460
Total assets	322,712	309,232	299,929
Deposits	233,260	224,006	210,241
Total liabilities	243,748	232,498	217,753
<b>Other (\$ billions) as at October 31</b>			
Assets under administration	\$ 315	\$ 318	\$ 310
Assets under management	\$ 155	\$ 145	\$ 135

(1) Taxable equivalent basis (TEB).

(2) Includes net income from investments in associated corporations of \$66 (2016 – \$78; 2015 – \$66).

(3) Refer to Glossary.

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

## Financial Performance

Canadian Banking's net income attributable to equity holders was \$4,064 million in 2017, an increase of \$328 million or 9%. This year's gain on sale of HollisWealth, a wealth management business, was lower than last year's gain on sale of a non-core lease financing business ("gain on sale of businesses"). The higher gains on sale of real estate offset by the lower gain on sale of businesses positively impacted net income growth by 2%. Strong performance from retail and small business banking, commercial banking and wealth management contributed to strong growth in 2017.

### Assets and liabilities

Average assets rose \$14 billion or 4% to \$323 billion. The growth reflected \$9 billion or 5% in residential mortgages, \$4 billion or 10% in business loans and acceptances, as well as \$3 billion or 4% in personal loans, which was partially offset by the Tangerine broker-originated and white-label mortgage run-off portfolios.

Average liabilities rose \$11 billion or 5% to \$244 billion. Retail banking experienced strong growth in chequing accounts of \$2 billion or 10% and savings deposits of \$7 billion or 10%. There was also growth of \$4 billion or 9% in small business and commercial banking business operating accounts. Partially offsetting was a decline in lower spread GICs of \$3 billion or 4%.

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

AUM of \$155 billion increased \$10 billion or 6%. Growth was driven by market appreciation and net sales. The sale of HollisWealth reduced AUM growth by 4%. AUA of \$315 billion decreased \$3 billion or 1%. Growth was driven primarily by market appreciation, which was more than offset by the 12% decrease due to sale of HollisWealth.

### Revenues

Canadian Banking reported total revenues of \$12,851 million in 2017, an increase of \$663 million or 5%.

Net interest income increased \$339 million or 5% to \$7,363 million. The increase was driven by a two basis point increase in the margin to 2.40%, and solid growth in assets and deposits. The increase in margin was primarily driven by margin expansion in retail deposits due to recent interest rate increases by the Bank of Canada. Margin also benefited from the run-off of lower spread Tangerine mortgages.

Non-interest income increased \$324 million or 6%. The higher gains on sale of real estate offset by the lower gain on sale of businesses positively impacted non-interest income by 2%. The remaining increase was driven by strong growth in credit cards, retail and commercial banking, insurance and wealth management businesses.

### Retail & Small Business Banking

Total retail and small business banking revenues were \$7,348 million, up \$505 million or 7%. Net interest income grew \$225 million or 4%, primarily driven by a three basis point improvement in the margin and solid growth in residential mortgages and deposits. Non-interest income increased \$280 million or 16%, primarily due to growth in credit card revenues, deposit payment service fees, insurance revenues and higher gain on sale of real estate.

### Commercial Banking

Total commercial banking revenues increased \$42 million or 2% to \$2,175 million. Net interest income rose \$91 million or 6% due mainly to growth in loans and business operating accounts, partly offset by a margin decline of two basis points. Non-interest income decreased due to last year's gain on sale of a non-core lease financing business, offset by higher acceptance fees and securities gains.

### Wealth Management

Total wealth management revenues were \$3,328 million, an increase of \$116 million or 4%, primarily due to the gain on sale of HollisWealth which was partially offset by lower revenue as a result of the sale. Net interest income rose \$22 million or 6% mainly due to growth in deposits and loans and improvements in deposit margin. Non-interest income was also up from higher fee based brokerage and investment management fees. Slightly lower mutual funds revenues from reduced net sales, change in asset mix and fee-rate reductions were offset by market appreciation.

### Non-interest expenses

Non-interest expenses were \$6,487 million for the year, an increase of \$163 million or 3%, primarily reflecting higher investments in digital and technology to support business growth. These were partially offset by benefits realized from cost-reduction initiatives and lower expenses as a result of the sale of HollisWealth.

### Operating Leverage

Operating leverage for the year was positive 2.9%, compared with positive 3.2% last year.

### Provision for credit losses

Provision for credit losses in the retail portfolio was \$857 million, up \$87 million or 11% from last year driven by growth in relatively higher spread loans. The provision for credit losses in the commercial portfolio were \$56 million, down \$6 million or 10% from last year.

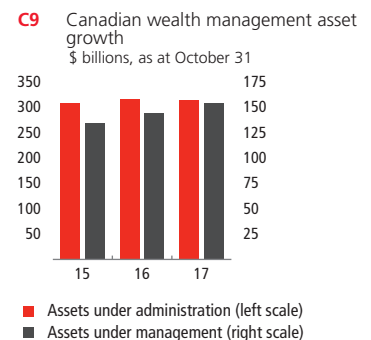
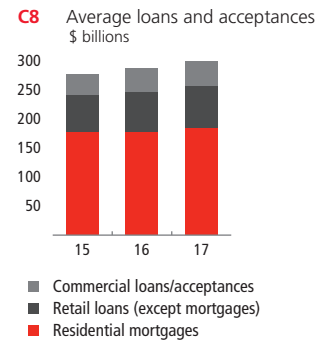
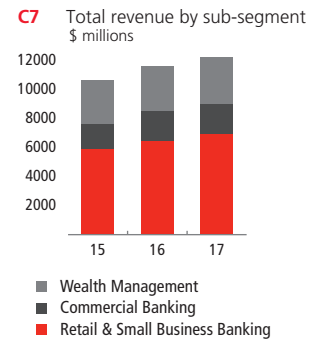
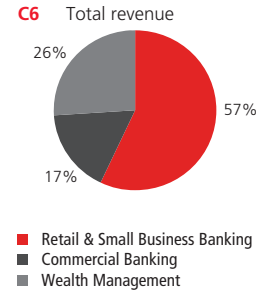
### Provision for income taxes

The effective tax rate decreased to 25.5%, compared to 25.8% primarily from lower taxes on the gains on sale of HollisWealth and real estate.

### Outlook

Canadian Banking's growth in 2018 will be driven in part by a favourable economic outlook and rising interest rate environment in Canada. Assets are projected to grow across retail and business lending products. Deposits are also expected to grow across retail chequing and savings, small business and commercial banking. Margins are expected to improve during 2018.

Non-interest revenues are expected to be lower due to the impact of the HollisWealth sale and expected lower real estate gains. Operational improvements will continue to be a focus that will lead to gains in productivity.



# International Banking

## 2017 Achievements

- **Customer Focus**
  - Completed the roll-out of Customer Pulse, our proprietary customer experience systems, allowing us to receive direct feedback from our customers in the Pacific Alliance countries.
  - Launched the Employee Pulse program empowering our employees to listen, identify and escalate any opportunity to deliver an excellent experience to our customers in the Pacific Alliance countries.
  - Grew our number of Primary Customers in Retail and Commercial Banking allowing us to establish stronger, long-term relationships.
  - Recognized as the Latin American Retail Bank of the Year by Retail Banker International.
- **Leadership**
  - Launched Workplace, Facebook's enterprise internal communication and productivity platform, across the Pacific Alliance countries and at Head Office in Toronto to drive engagement and collaboration across the Bank.
  - Increased the representation of women in leadership positions by 9% year-over-year.
- **Structural Cost Transformation**
  - Surpassed the 2017 structural cost reduction target and progressed well toward our productivity ratio goal.
  - Delivered positive operating leverage.
- **Digital Transformation**
  - Opened Digital Factories in our priority markets of Mexico, Colombia, Chile and Peru to drive innovation and development of online and mobile banking solutions for our customers.
  - Held our first Digital Investor Day and provided key digital banking targets of which, significant progress has already been made in increasing the percentage of digital sales, reducing the percentage of transactions made in branches, and increasing the proportion of customers adopting digital channels.
  - Established partnerships with venture capital firms, Fintechs, accelerators, and academic institutions to advance the Bank's digital transformation and build synergies with the Pacific Alliance countries' digital innovation ecosystems.
  - Named the "World's Best Consumer Digital Bank 2017" in 24 countries across Latin America and the Caribbean, and received the award for "Best in Mobile Banking" in the region from Global Finance magazine.
- **Business Mix Alignment**
  - Increased loan market share in most key markets.
  - Achieved strong deposit growth across several regions and divisions.

## Business Profile

International Banking (IB) has a well-established, diversified franchise that serves more than 15 million Retail, Corporate, and Commercial customers across our footprint. These customers are supported by over 50,000 employees, more than 1,800 branches and a network of contact and business support centers. IB is focused on growing operations in Latin America, including the Pacific Alliance countries of Mexico, Peru, Chile and Colombia, and the Caribbean and Central America.

We believe the Pacific Alliance countries offer excellent opportunities for growth with young demographics, low banking penetration, growing economies, low consumer indebtedness and stable banking systems. The Caribbean and Central America countries are more mature markets, but still very profitable. We see continued opportunities to optimize operations, improve customer profitability and reduce structural costs.

## Strategy

International Banking continues to execute on a long-term strategy focused on grow in the Pacific Alliance countries and optimizing operations in Central America and the Caribbean. Our strategy is organized around five areas: customer focus, leadership, structural cost transformation, digital transformation and business mix alignment.

## 2018 Priorities

Our primary focus to further our strategy and grow across our footprint is to focus on the following key initiatives:

- **Customer focus:** Take customer experience to the next level by leveraging the Customer Pulse program and implement the Employee Pulse program to gather feedback from front-line employees on how to better serve our customers.
- **Leadership:** Continue to strengthen our teams across our business lines and functions.
- **Structural cost transformation:** Continue to make progress on our cost reduction programs, while focusing on developing new capabilities across the Bank.
- **Digital transformation:** Scale-up our digital banking units across the four Pacific Alliance countries (and Canada), continue driving digital sales on priority products, and accelerate digital adoption and transaction migration.
- **Business mix alignment:** Strategically grow in key areas, including core deposits, to improve profitability and reduce funding costs.

**T19** International Banking financial performance

(\$ millions)	2017	2016	2015
Net interest income <sup>(1)</sup>	\$ 6,726	\$ 6,359	\$ 5,706
Non-interest income <sup>(1)(2)</sup>	3,688	3,482	3,137
Total revenue <sup>(1)</sup>	10,414	9,841	8,843
Provision for credit losses	1,294	1,281	1,128
Non-interest expenses	5,664	5,523	5,095
Income tax expense <sup>(1)</sup>	828	707	568
Net income	\$ 2,628	\$ 2,330	\$ 2,052
Net income attributable to non-controlling interests	238	251	199
Net income attributable to equity holders of the Bank	\$ 2,390	\$ 2,079	\$ 1,853
<b>Key ratios</b>			
Return on equity <sup>(3)</sup>	14.7%	12.8%	13.0%
Productivity <sup>(1)</sup>	54.4%	56.1%	57.6%
Net interest margin <sup>(4)</sup>	4.79%	4.71%	4.71%
Provision for credit losses as a percentage of loans and acceptances	1.21%	1.26%	1.24%
<b>Selected Consolidated Statement of Financial Position data (average balances)</b>			
Earning assets <sup>(5)</sup>	\$ 140,471	\$ 135,167	\$ 121,130
Total assets	147,537	142,582	128,248
Deposits	95,232	87,508	73,946
Total liabilities	114,694	109,302	94,340
<b>Other (\$ millions as at October 31)</b>			
Assets under administration	\$ 88,189	\$ 85,888	\$ 80,606
Assets under management	\$ 52,553	\$ 47,287	\$ 43,560

(1) Taxable equivalent basis.

(2) Includes net income from investments in associated corporations of \$482 (2016 – \$473; 2015 – \$476).

(3) Refer to Glossary.

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

(5) Includes bankers acceptances.

## Financial Performance

Net income attributable to equity holders was \$2,390 million, up 15% from \$2,079 million, with strong results in Latin America and the Caribbean and Central America. The increase reflects higher net interest income and fees driven by good loan growth, lower commercial provisions for credit losses and the benefits of cost-reduction initiatives. This was partly offset by higher income taxes.

### Assets and Liabilities

Average assets of \$148 billion were up \$5 billion or 3%. Adjusting for the impact of foreign currency translation, retail loan growth was 8% and commercial loan growth was 5%, with Latin America driving the growth of 13% and 7% respectively. Average liabilities increased \$5 billion or 5% to \$115 billion largely due to 9% growth in deposits, or 10% adjusting for the impact of foreign currency translation, including demand and savings deposits up 8% and term deposits up 11%.

### Revenues

Total revenues of \$10,414 million increased \$573 million or 6%. Net interest income increased \$367 million or 6% driven by good loan growth, acquisitions in Central America, and a higher net interest margin. The net interest margin rose eight basis points to 4.79% due to changes in business mix, as retail loan growth outpaced commercial loan growth, and higher spreads mainly related to Central Bank rate changes in Latin America last year. Non-interest income increased \$206 million or 6%. This increase was largely driven by higher net fee and commission revenues which increased \$176 million or 7%.

### Latin America

Total revenues of \$6,949 million increased 8% from last year. Net interest income increased \$347 million or 8%, or 9% excluding the impact of foreign currency translation, reflecting the impact of strong asset growth and a higher net interest margin. The net interest margin rose 12 basis points to 4.85% due to business mix and Central Bank rate changes. Non-interest income increased \$146 million or 7% primarily from net fee and commission revenues up \$140 million or 7% largely driven by transaction fees and card revenues.

### Caribbean and Central America

Total revenues were \$3,032 million, up 2% versus last year or 5% adjusting for the negative impact of foreign currency translation. Net interest income increased \$20 million or 1%; however, 4% adjusting for the negative impact of foreign currency translation driven by asset growth primarily in Central America and Dominican Republic. Non-interest income was up \$45 million or 5%; however, 7% adjusting for the negative impact of foreign currency translation as a result of strong growth in transaction fees, credit card revenues and wealth fees.

### Asia

Total revenues were \$433 million, up 3% versus last year. This was primarily driven by a higher contribution from Thanachart Bank, partly offset by a lower contribution from Bank of Xi'an.

### Non-interest expenses

Non-interest expenses of \$5,664 million increased \$141 million or 3% from last year. The increase reflected business volume growth, inflationary increases, increased technology spending, and the impact of acquisitions, partly offset by the positive impact of foreign currency translation and the benefits of expense management programs. Operating leverage was a positive 3.3%.

### Provision for credit losses

The provision for credit losses increased \$13 million or 1% to \$1,294 million. Retail provisions for credit losses increased in line with loan growth. Commercial provisions for credit losses decreased, mainly in Colombia, the Caribbean and Mexico, relative to the high levels last year. Overall, the provision for credit losses ratio improved five basis points to 1.21%.

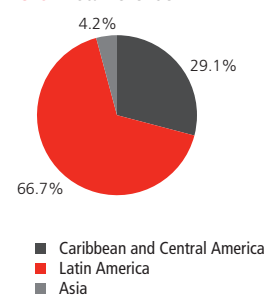
### Provision for income taxes

The effective tax rate was 24.0% compared to 23.3% last year due primarily to lower tax benefits in Mexico.

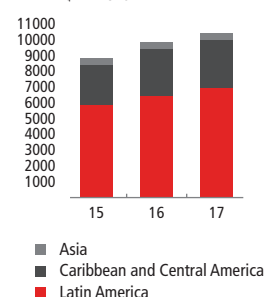
### Outlook

International Banking's earnings growth in 2018 will be achieved through leveraging its diversified footprint, with particular focus on the Pacific Alliance countries. Economic growth is expected to improve in these countries, driving low double digit loan growth in this region. Margins and credit quality are expected to remain stable. Expense management and delivery of positive operating leverage remain key business priorities. The current strength of the Canadian dollar has the potential to negatively impact reported earnings growth in International Banking in 2018. While the primary business focus remains on organic growth, acquisition opportunities that are strategically aligned and complement current operations within International Banking's existing footprint will be considered.

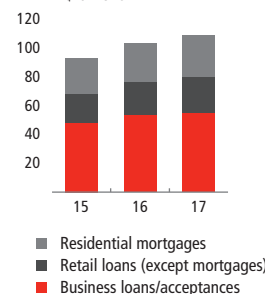
C10 Total revenue



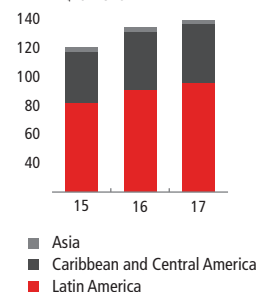
C11 Total revenue by region \$ millions



C12 Average loans and acceptances \$ billions



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



(1) Average earning assets excluding bankers acceptances

# Global Banking and Markets

## 2017 Achievements

In 2017, we continued to build our franchise as a leading wholesale bank in Canada and the Pacific Alliance and made significant progress on our key priorities:

- **Customer Focus**
  - Enhanced our customer focus and delivered superior service and solutions to our customers – a sample of our Awards and Recognitions, along with Deal Highlights from 2017, are listed below.
  - Expanded our investment banking franchise across the Bank's global footprint to better align our enhanced customer-focused strategy in our priority markets.
- **Business Mix Alignment**
  - Shifted our business mix to focus our resources on our priority markets and businesses.
- **Resource Productivity**
  - Made significant investments in people, process and technology, and improved our resource productivity. We continue to optimize and modernize our operations and systems to better serve our customers and reduce costs.
- **Digital Transformation**
  - Continued investment in digital technologies and automation to provide a better customer experience. In 2017, we became the first Canadian bank to launch a mobile banking app for business with an integrated digital security token.

## Awards and Recognitions

- Ranked #3 in Thomson Reuters LPC's League Table for Investment Grade Loan Syndications in Canada, and #16 in the United States, for the first three quarters of 2017.
- Ranked #2 in Bloomberg's League Table for Loan Syndications in Latin America, for the first three quarters of 2017.
- Recognized with four Latin America Project & Infrastructure Finance Awards by LatinFinance during 2017:
- Best Airport Financing: Mexico City Airport Trust (Bond Financing)
- Best Transport Financing: Mexico City Airport Trust (Bond Financing)
- Best Infrastructure Financing – Mexico: Red Compartida (Project Financing)
- Best Infrastructure Financing – Caribbean: Aeropuertos Dominicanos Siglo XXI (Loan and Bond Financing)
- Scotiabank's Equity Research team achieved eight #1 industry rankings and 18 top-tier sector rankings overall in the 2017 Canadian Equity Investors Study by Greenwich Associates.

## Deal Highlights

- Acted as Financial Advisor to Royal Dutch Shell (Shell) on the sale of its 60% interest in the Athabasca Oil Sands Project and 100% interest in the Peace River Complex for C\$11.1 billion to Canadian Natural Resources Limited (CNRL), as well as the concurrent joint acquisition by Shell and CNRL of Marathon Oil Canada Corporation for US\$2.5 billion. Scotiabank also acted as Joint Lead Arranger on CNRL's related C\$9 billion bridge credit facility.
- Acted as Exclusive Financial Advisor to Veresen Inc. on its acquisition by Pembina Pipeline Corporation. The transaction, valued at C\$9.4 billion, created one of the largest energy infrastructure companies in Canada.
- Acted as Joint Lead Arranger and Underwriter of 50% of a new US\$1.2 billion financing to support Jacobs Engineering's acquisition of CH2M Hill. In addition, Scotiabank backstopped 50% of the company's existing US\$1.6 billion credit facility in connection with the acquisition.
- Acted as Global Coordinator, Joint Bookrunner and Billing & Delivery Agent on the inaugural PEN10 billion Euroclearable bond issuance due 2032 by the Republic of Peru. This transaction represents the first PEN-denominated issuance ever to clear and settle through Euroclear.
- Acted as Bookrunner on a £4.0 billion syndicated re-opening of the Conventional Gilt due 2065 for the UK Debt Management Office (UK DMO). This was Scotiabank's first ever bookrunner role in a Conventional Gilt syndication, and was the second bookrunner mandate received from the UK DMO in the past 12 months.
- Acted as Mandated Lead Arranger, Underwriter, Bookrunner and Hedge Provider on a A\$5.9 billion debt facility for the acquisition of the Endeavour Energy electricity network in Australia by MIRA, AMP Capital, BCIMC and Qatar Investment Authority.

## Business Profile

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

More specifically, GBM provides clients with: corporate lending; transaction banking (including trade finance and cash management); investment banking (including corporate finance and mergers & acquisitions); fixed income and equity underwriting, sales, trading and research; prime services (prime brokerage and stock lending); foreign exchange sales and trading; commodity derivatives; precious and base metals sales, trading, financing and physical services; and collateral management.

## Strategy

Global Banking and Markets continues to build its franchise as a leading wholesale bank in Canada and the Pacific Alliance, while maintaining a relevant presence in other regions to support its multi-regional customers.

## 2018 Priorities

- **Enhance Customer Focus:** We continue to place the customer at the centre of everything we do. We are improving the end-to-end customer experience to seamlessly offer our full capabilities, thereby deepening and strengthening our relationships, while leveraging our global footprint to better serve our multi-regional customers.

- **Leaders in our Primary Markets:** We are investing in people, process and technology, enhancing our capabilities in our primary markets of Canada and the Pacific Alliance. We are expanding our investment banking and capital markets expertise to increase our relevance and deepen our customer relationships in these markets.
- **Optimize Effectiveness:** We are controlling costs and investing in the right areas to drive shareholder value, while optimizing our use of capital and funding. We are investing in technology to enhance the customer experience, improve our data and analytics capabilities, and increase operational effectiveness.

**T20** Global Banking and Markets financial performance

(\$ millions)	2017	2016	2015
Net interest income <sup>(1)</sup>	\$ 1,336	\$ 1,293	\$ 1,071
Non-interest income <sup>(1)</sup>	3,288	3,139	2,953
Total revenue <sup>(1)</sup>	4,624	4,432	4,024
Provision for credit losses	42	249	67
Non-interest expenses	2,160	2,040	1,846
Income tax expense <sup>(1)</sup>	604	572	558
Net income	\$ 1,818	\$ 1,571	\$ 1,553
Net income attributable to non-controlling interests in subsidiaries	–	–	–
Net income attributable to equity holders of the Bank	\$ 1,818	\$ 1,571	\$ 1,553
<b>Key ratios</b>			
Return on equity <sup>(2)</sup>	16.0%	12.6%	13.0%
Productivity <sup>(1)</sup>	46.7%	46.0%	45.9%
Net interest margin <sup>(3)(4)</sup>	1.75%	1.67%	1.65%
Provision for credit losses as a percentage of loans and acceptances	0.05%	0.30%	0.10%
<b>Selected Consolidated Statement of Financial Position data (average balances)</b>			
Trading assets	\$ 103,861	\$ 103,316	\$ 108,137
Loans and acceptances	79,937	81,662	70,103
Earning assets	291,870	298,664	290,482
Total assets	335,599	350,627	342,389
Deposits	77,158	77,261	63,308
Total liabilities	267,377	269,755	239,628

(1) Taxable equivalent basis.

(2) Refer to Glossary.

(3) Business Banking only.

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



## Financial Performance

Global Banking and Markets reported net income attributable to equity holders of \$1,818 million in 2017, an increase of \$247 million or 16% from last year. Stronger results in the equities business related primarily to higher client trading activity contributed approximately 6% of the earnings growth. As well, significantly lower provision for credit losses were partly offset by higher non-interest expenses.

### Average assets

Average assets decreased by \$15 billion or 4% to \$336 billion this year. Adjusting for the impact of foreign currency translation, assets decreased by \$9 billion or 2%, as decreases in securities purchased under resale agreements and derivative-related assets were partly offset by higher trading securities.

### Average liabilities

Average liabilities decreased by \$3 billion or 1% to \$267 billion this year. Adjusting for the impact of foreign currency translation, liabilities increased by \$2 billion or 1% due to growth in securities sold under repurchase agreements and bullion deposits, partly offset by lower derivative-related liabilities.

### Net interest income

Net interest income increased by 3% to \$1,336 million, mainly driven by higher deposit volumes and higher lending volumes in the U.S. and Canada. The net interest margin was 1.75%, an increase of eight basis points.

### Non-interest income

Non-interest income of \$3,288 million increased by \$149 million or 5%. Stronger trading revenues in equities, net gains on investment securities and higher underwriting fees contributed to the growth. This was partly offset by lower banking fees and lower trading revenues in metals and fixed income.

### Non-interest expenses

Non-interest expenses increased by \$120 million or 6% to \$2,160 million in 2017. This was due primarily to higher regulatory, compliance and technology costs. Operating leverage was negative 1.5%.

### Provision for credit losses

The provision for credit losses decreased \$207 million to \$42 million due primarily to higher energy sector provisions last year. The provisions this year were primarily in Asia and Europe. The provision for credit losses ratio was down 25 basis points to five basis points.

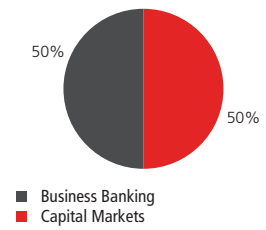
### Provision for income taxes

The effective tax rate of 25.0% was 1.7% lower than the prior year, due to lower taxes in certain foreign operations.

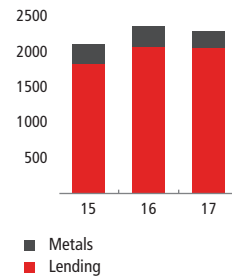
### Outlook

With the execution of our client-focused strategies, investment in our people and capabilities including our Global Investment Banking platform, we expect continued strong growth in deposits and improved Corporate Banking results. This growth is expected to be partly offset by lower revenues from certain client-driven capital market transactions. Expenses are expected to rise to support higher regulatory and technology investments.

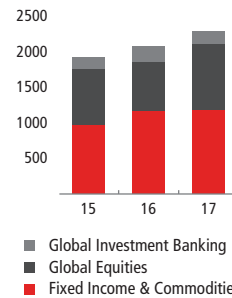
**C14** Total revenue



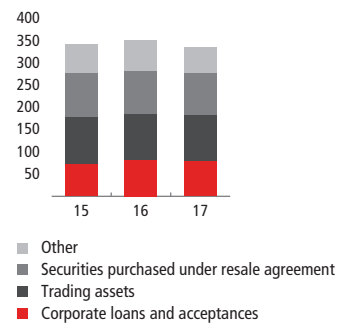
**C15** Business banking revenue \$ millions



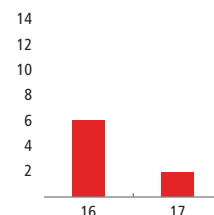
**C16** Capital markets revenue by business line \$ millions



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



**C18** Trading day losses



## Other

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

### Financial Performance

#### T21 Other financial performance

(\$ millions)	2017	2016	2015
Net interest income <sup>(1)</sup>	\$ (390)	\$ (384)	\$ (100)
Non-interest income <sup>(1)(2)</sup>	(344)	273	35
Total revenue <sup>(1)</sup>	(734)	(111)	(65)
Provision for (recovery of) credit losses	–	50	60
Non-interest expenses	319	653	86
Income tax expense <sup>(1)</sup>	(786)	(545)	(475)
Net income	\$ (267)	\$ (269)	\$ 264
Net income attributable to equity holders of the Bank	\$ (267)	\$ (269)	\$ 264

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

(2) Includes net income from investments in associated corporations of \$(141) in 2017; (2016 – \$(137); 2015 – \$(137)).

Net interest income, other operating income, and the provision for income taxes in each period include the elimination of tax-exempt income gross-up. This amount is included in the operating segments, which are reported on a taxable equivalent basis. The elimination was \$562 million in 2017, compared to \$299 million in 2016.

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

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

#### Revenues

Revenues declined by \$623 million mainly due to higher taxable equivalent basis offsets (eliminated in tax expenses), lower net gain on investment securities, lower net gain on sale of real estate, and the negative impact of foreign currency translation (including hedges).

#### Provision for credit losses

The decrease in provision for credit losses relates to an increase of \$50 million in the collective allowance for credit losses against performing loans in the prior year.

#### Non-interest expenses

Non-interest expenses were \$319 million in 2017. Adjusting for the Bank's restructuring charge of \$378 million in Q2 2016, non-interest expenses increased by \$44 million compared to 2016. The increase was largely due to lower employee benefit expenses in the prior year.

## Financial Performance of Business Lines: 2016 vs. 2015

### Canadian Banking

Canadian Banking's net income attributable to equity holders was \$3,736 million in 2016, an increase of \$392 million or 12%. The gain on the sale of a non-core lease financing business ("the gain on sale") of \$116 million pre-tax or \$100 million after tax contributed 3% growth to net income. Strong performance from retail and small business banking, commercial banking and wealth management, as well as the impact of the credit card portfolio acquired from JPMorgan Chase Bank ("the acquisition") contributed to the growth. Return on equity was 22.0% up from 21.0% in 2015.

### International Banking

Net income attributable to equity holders was \$2,079 million, an increase of \$226 million or 12%. Earnings from strong asset and fee growth, including the positive impact of foreign currency translation, were partly offset by higher provision for credit losses. Strong underlying asset and fee growth in Latin America and a solid contribution from Caribbean & Central America were complemented by earnings in Asia. Return on equity was 12.8%, versus 13.0% in 2015.

### Global Banking and Markets

Global Banking and Markets reported net income attributable to equity holders of \$1,571 million in 2016, an increase of \$18 million or 1% from 2015. Stronger results in the fixed income, corporate lending and commodities businesses, as well as the positive impact of foreign currency translation, were mainly offset by higher provision for credit losses and lower results in equities. Return on equity was 12.6% versus 13.0% in 2015.

### Other

The Other segment had a net loss attributable to equity holders of \$269 million in 2016. Adjusting for the restructuring charge of \$378 million (\$278 million after tax; refer T2), net income was \$9 million in 2016. Net income attributable to equity holders was \$264 million in 2015 which included a number of largely offsetting items, comprised of a reduction in pension benefit accrual related to modifications made to the Bank's main pension plan of \$204 million pre-tax (\$151 million after tax), an increase to the collective allowance for credit losses against performing loans due to the increase in the loan portfolio of \$60 million pre-tax (\$44 million after tax), and reorganization costs related to Canadian Banking's shared services operations of \$61 million pre-tax (\$45 million after tax).

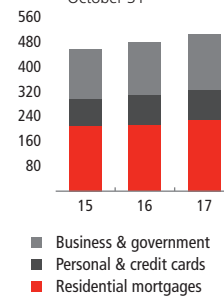
## GROUP FINANCIAL CONDITION

### T22 Condensed statement of financial position

As at October 31 (\$ billions)

	2017	2016	2015
<b>Assets</b>			
Cash, deposits with financial institutions and precious metals	\$ 65.4	\$ 54.8	\$ 84.5
Trading assets	98.5	108.6	99.1
Securities purchased under resale agreements and securities borrowed	95.3	92.1	87.3
Investment securities	69.3	72.9	43.2
Loans	504.4	480.2	458.6
Other	82.4	87.7	83.8
<b>Total assets</b>	<b>\$ 915.3</b>	<b>\$896.3</b>	<b>\$856.5</b>
<b>Liabilities</b>			
Deposits	\$ 625.4	\$611.9	\$600.9
Obligations related to securities sold under repurchase agreements and securities lent	95.8	97.1	77.0
Other liabilities	126.5	121.8	118.9
Subordinated debentures	5.9	7.6	6.2
<b>Total liabilities</b>	<b>\$ 853.6</b>	<b>\$838.4</b>	<b>\$803.0</b>
<b>Equity</b>			
Common equity	55.5	52.7	49.1
Preferred shares and other equity instruments	4.6	3.6	2.9
Non-controlling interests in subsidiaries	1.6	1.6	1.5
<b>Total equity</b>	<b>\$ 61.7</b>	<b>\$ 57.9</b>	<b>\$ 53.5</b>
<b>Total liabilities and shareholders' equity</b>	<b>\$ 915.3</b>	<b>\$896.3</b>	<b>\$856.5</b>

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



C20 Deposits  
\$ billions, as at October 31



### Statement of Financial Position

#### Assets

The Bank's total assets as at October 31, 2017 were \$915 billion, up \$19 billion or 2% from October 31, 2016. Adjusting for the impact of foreign currency translation, total assets were up \$32 billion. This growth was primarily in loans, while increases in deposits with financial institutions were offset by lower trading assets and investment securities.

Cash and deposits with financial institutions increased \$13 billion, while trading assets decreased \$10 billion due primarily to a decrease in trading securities.

Investment securities decreased \$4 billion from October 31, 2016 due primarily to lower holdings of held-to-maturity securities. The unrealized gain on available-for-sale securities, after the impact of qualifying hedges, decreased \$74 million to an unrealized loss of \$48 million as at October 31, 2017, due mainly to realized gains on disposals and changes in interest rates.

Loans increased \$24 billion or 5% from October 31, 2016. Adjusting for the impact of foreign currency translation, loans increased \$30 billion. Residential mortgages increased \$15 billion and personal loans and credit cards were up \$5 billion primarily in Canada and Latin America. Business and government loans were up \$10 billion, mainly in Canada and Latin America.

Derivative instrument assets decreased \$6 billion due primarily to lower mark-to-market amounts related to interest rate contracts.

## Liabilities

Total liabilities were \$854 billion as at October 31, 2017, up \$15 billion or 2% from October 31, 2016. Adjusting for the impact of foreign currency translation, total liabilities were up \$29 billion.

Total deposits increased \$13 billion. Adjusting for the impact of foreign currency translation, total deposits increased \$23 billion. Personal deposits grew by \$2 billion, primarily in Canada and Latin America, and business and government deposits grew by \$20 billion, mainly in Canada, the U.S. and Latin America.

Obligations related to securities sold short increased by \$7 billion. Derivative instrument liabilities decreased by \$8 billion, which was similar to the decrease in derivative instrument assets. Total wholesale funding decreased by \$8 billion.

## Equity

Total shareholders' equity increased \$3,804 million from October 31, 2016. This increase was driven mainly by current year earnings of \$8,243 million and a net increase in preferred shares and other equity instruments of \$985 million. Partly offsetting was a reduction in other comprehensive income of \$709 million, due primarily to a decrease in unrealized foreign currency translation gains on the Bank's investments in its foreign operations, dividends paid of \$3,797 million and the repurchase and cancellation of approximately 14 million common shares for \$1,009 million.

## Outlook

Assets and deposits are expected to continue to increase in 2018 across all business lines. In Canada, while growth in residential mortgages is expected to moderate, other retail and commercial lending should continue to expand. Internationally, lending assets and personal deposits are expected to increase with stronger growth in the Pacific Alliance countries.

## Capital Management

### Overview

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

### Governance and oversight

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

### Risk appetite

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

### Regulatory capital

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

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

The Office of the Superintendent of Financial Institutions, Canada (OSFI) has issued guidelines, reporting requirements and disclosure guidance which are consistent with the Basel III reforms, except for its deferral of the Basel III credit valuation adjustment (CVA) related capital charges, requiring they be phased-in over a five year period, beginning January 2014. In accordance with OSFI's requirements, during 2017, the scalars for CVA risk-weighted assets of 0.72, 0.77 and 0.81 were used to compute the CET1, Tier 1 and Total capital ratios, respectively (October 31, 2016 – scalars of 0.64, 0.71 and 0.77, respectively). The scalars will increase to 0.80, 0.83 and 0.86, respectively, effective in the first quarter of 2018.

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

In addition to risk-based capital requirements, the Basel III reforms introduced a simpler, non risk-based Leverage ratio requirement to act as a supplementary measure to its risk-based capital requirements. The Leverage ratio is defined as a ratio of Basel III Tier 1 capital to a leverage exposure measure which includes on-balance sheet assets and off-balance sheet commitments, derivatives and securities financing transactions, as defined within the requirements. In January 2014, the BCBS issued revisions to the Basel III Leverage ratio framework.

In 2014, OSFI released its Basel III Leverage Ratio Requirements Guideline and Public Disclosure Requirements which outlines the application and disclosure of the Basel III Leverage ratio in Canada and the replacement of the former Assets-to-Capital Multiple (ACM), effective the first quarter of 2015. Institutions are expected to maintain a material operating buffer above the 3% minimum.

### Regulatory developments related to capital

Effective Q1 2017, new OSFI requirements were implemented for Canadian uninsured loans secured by residential real estate in response to evolving risks, such as risks associated with elevated house prices in certain markets, and increasing levels of household debt. The new requirements for loss given default (LGD) capital models under the Advanced Internal Ratings-Based (AIRB) Approach introduced a risk-sensitive floor which is tied to increases in local property prices and/or to house prices that are high relative to borrower income. The changes apply to new originations, refinances and renewals of all uninsured real estate secured products on a go-forward basis.

### Planning, managing and monitoring capital

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

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

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

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

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

### Capital generation

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

### Capital instruments utilization

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

### Regulatory capital ratios

The Bank continues to maintain strong, high quality capital levels which position it well for future business growth. The Basel III all-in Common Equity Tier 1 (CET1) ratio as at October 31, 2017 was 11.5%. The CET1 ratio grew by 50 basis points in 2017 primarily from strong internal capital generation.

The Bank's Basel III all-in Tier 1 and Total capital ratios were 13.1% and 14.9%, respectively, as at October 31, 2017. In addition, the Leverage ratio also improved to 4.7%. The Tier 1, Total capital ratios and the Leverage ratio also benefited from the US\$1.25 billion issuance of subordinated NVCC additional Tier 1 capital during the fourth quarter.

The Bank's capital ratios continue to be well in excess of OSFI's minimum capital ratio requirements for 2017 (including the 1% D-SIB surcharge) of 8%, 9.5% and 11.5% for CET1, Tier 1 and Total Capital, respectively. The Bank was well above the OSFI prescribed minimum Leverage ratio as at October 31, 2017.

### Outlook

The Bank will continue to have a strong capital position in 2018. Capital will be prudently managed to support organic growth initiatives, selective acquisitions that enhance shareholder returns, and meet higher capital requirements from evolving accounting and regulatory changes.

**T23 Regulatory capital<sup>(1)</sup>**

As at October 31 (\$ millions)	Basel III All-in		
	2017	2016	2015
<b>Common Equity Tier 1 capital</b>			
Total Common Equity	\$ 55,454	\$ 52,657	\$ 49,085
Qualifying non-controlling interest in common equity of subsidiaries	636	597	557
Goodwill and non-qualifying intangibles, net of deferred tax liabilities <sup>(2)</sup>	(11,505)	(11,589)	(11,018)
Threshold related deductions	(271)	(435)	(664)
Net deferred tax assets (excluding those arising from temporary differences)	(417)	(484)	(539)
Other Common Equity Tier 1 capital deductions <sup>(3)</sup>	(545)	(757)	(456)
<b>Common Equity Tier 1</b>	<b>43,352</b>	<b>39,989</b>	<b>36,965</b>
Preferred shares <sup>(4)</sup>	3,019	3,594	2,934
Subordinated additional Tier 1 capital securities (NVCC)	1,560	–	–
Capital instrument liabilities – trust securities <sup>(4)</sup>	1,400	1,400	1,400
Other Tier 1 capital adjustments <sup>(5)</sup>	142	83	67
<b>Net Tier 1 capital</b>	<b>49,473</b>	<b>45,066</b>	<b>41,366</b>
<b>Tier 2 capital</b>			
Subordinated debentures, net of amortization <sup>(4)</sup>	5,935	7,633	6,182
Eligible collective allowance for inclusion in Tier 2 and excess allowance (re: IRB approach)	602	528	486
Qualifying non-controlling interest in Tier 2 capital of subsidiaries	103	103	196
Other Tier 2 capital adjustments	–	–	–
<b>Tier 2 capital</b>	<b>6,640</b>	<b>8,264</b>	<b>6,864</b>
<b>Total regulatory capital</b>	<b>56,113</b>	<b>53,330</b>	<b>48,230</b>
<b>Risk-weighted assets (\$ billions)</b>			
Credit risk	315.2	314.8	308.0
Market risk	7.8	10.6	14.4
Operational risk	40.6	38.6	35.6
Basel I capital floor adjustment <sup>(6)</sup>	12.8	–	–
CET1 risk-weighted assets <sup>(6)(7)</sup>	\$ 376.4	\$ 364.0	\$ 358.0
<b>Capital ratios<sup>(8)</sup></b>			
Common Equity Tier 1	11.5%	11.0%	10.3%
Tier 1	13.1%	12.4%	11.5%
Total	14.9%	14.6%	13.4%
<b>Leverage:</b>			
Leverage exposures	\$1,052,891	\$ 1,010,987	\$ 980,212
Leverage ratio	4.7%	4.5%	4.2%

(1) Effective November 1, 2012, regulatory capital ratios are determined in accordance with Basel III rules on an all-in basis.

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

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

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

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

(6) 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. As at October 31, 2017, CET1 RWA included a Basel I floor adjustment of \$12.8 billion (2016 and 2015 - nil).

(7) As at October 31, 2017, CVA risk-weighted assets were calculated using scalars of 0.72, 0.77, and 0.81 to compute CET1, Tier 1 and Total capital ratios, respectively, (scalars of 0.64, 0.71, and 0.77 in 2016).

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

**T24** Changes in regulatory capital<sup>(1)</sup>

For the fiscal years (\$ millions)	Basel III All-in		
	2017	2016	2015
<b>Total capital, beginning of year</b>	<b>\$ 53,330</b>	\$ 48,230	\$ 43,592
<b>Changes in Common Equity Tier 1</b>			
Net income attributable to common equity holders of the Bank	7,876	6,987	6,897
Dividends paid to equity holders of the bank	(3,668)	(3,468)	(3,289)
Shares issued	313	391	104
Shares repurchased/redeemed	(1,009)	(80)	(955)
Gains/losses due to changes in own credit risk on fair valued liabilities	185	(2)	(158)
Movements in accumulated other comprehensive income, excluding cash flow hedges	(634)	(472)	1,451
Change in non-controlling interest in common equity of subsidiaries	39	40	43
Change in goodwill and other intangible assets (net of related tax liability) <sup>(2)</sup>	84	(571)	(535)
Other changes including regulatory adjustments below:	177	199	(335)
– Deferred tax assets that rely on future profitability (excluding those arising from temporary differences)	67	55	81
– Significant investments in the common equity of other financial institutions (amount above 10% threshold)	129	61	(317)
– Other capital deductions	35	126	44
– Other	(54)	(43)	(143)
<b>Changes in Common Equity Tier 1</b>	<b>\$ 3,363</b>	\$ 3,024	\$ 3,223
<b>Changes in Additional Tier 1 Capital</b>			
Issued	1,560	1,350	–
Redeemed	(575)	(690)	–
Other changes including regulatory adjustments and phase-out of non-qualifying instruments	59	16	70
<b>Changes in Additional Tier 1 Capital</b>	<b>\$ 1,044</b>	\$ 676	\$ 70
<b>Changes in Tier 2 Capital</b>			
Issued	–	2,502	1,250
Redeemed	(1,500)	(1,035)	–
Collective allowances eligible for inclusion in Tier 2 and Excess Allowance under AIRB	74	42	17
Other changes including regulatory adjustments and phase-out of non-qualifying instruments	(198)	(109)	78
<b>Changes in Tier 2 Capital</b>	<b>\$ (1,624)</b>	\$ 1,400	\$ 1,345
<b>Total capital generated (used)</b>	<b>\$ 2,783</b>	\$ 5,100	\$ 4,638
<b>Total capital, end of year</b>	<b>\$ 56,113</b>	\$ 53,330	\$ 48,230

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

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



## Regulatory capital components

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

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

Additional Tier 1 capital consists primarily of qualifying non-cumulative preferred shares, qualifying other equity instruments (as described in Note 23), and non-qualifying preferred shares and innovative Tier 1 instruments subject to phase-out. Tier 2 capital consists mainly of qualifying or non-qualifying subordinated debentures subject to phase-out and the eligible allowances for credit losses.

The Bank's CET1 capital was \$43.4 billion as at October 31, 2017, an increase of \$3.4 billion from the prior year primarily from:

- \$4.2 billion growth from internal capital generation; and,
- \$0.5 billion from decreases in regulatory capital deductions and other regulatory capital adjustments.

Partly offset by:

- \$0.7 billion from common share buybacks net of common shares issuances under the Bank's employee share purchase and stock option plans; and,
- \$0.6 billion decrease from movements in Accumulated Other Comprehensive Income, excluding cash flow hedges, primarily from the impact of foreign currency translation, partly offset by gains from employee pensions and benefits plans.

The Bank's Tier 1 and Total capital ratios also benefited from the above changes and the issuance of US\$1.25 billion of NVCC subordinated additional Tier 1 capital securities, partly offset by the planned redemptions of non-NVCC preferred shares of \$0.6 billion. In addition, Total capital was lower due to the \$1.5 billion planned redemption of non-NVCC subordinated debentures during the year.

## Dividends

The strong earnings and capital position allowed the Bank to increase its dividends twice in 2017. The annual dividend in 2017 was \$3.05, compared to \$2.88 in 2016, an increase of 6%. The dividend payout ratio was 46.6% in line with the Bank's Board approved target dividend payout ratio of 40-50%.

### T25 Selected capital management activity

For the fiscal years (\$ millions)	2017	2016	2015
Dividends			
Common	\$ 3,668	\$ 3,468	\$ 3,289
Preferred	129	130	117
Common shares issued <sup>(1)(2)</sup>	313	391	104
Common shares repurchased for cancellation under the Normal Course Issuer Bid <sup>(2)</sup>	1,009	80	955
Preferred shares and other equity instruments issued	1,560	1,350	–
Preferred shares and other equity instruments redeemed	575	690	–
Subordinated debentures issued	–	2,502	1,250
Maturity, redemption and repurchase of subordinated debentures	1,500	1,035	20

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

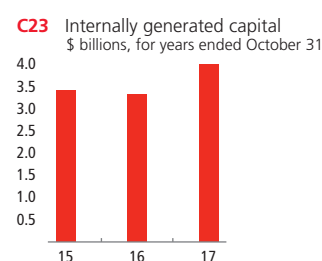
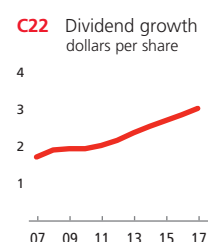
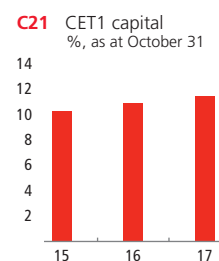
(2) Represents reduction to Common shares and Retained earnings (refer to the Consolidated Statement of Changes in Equity).

## Normal Course Issuer Bid

During the year ended October 31, 2017, under normal course issuer bids, the Bank repurchased and cancelled approximately 14 million common shares (2016 – 1.5 million) at an average price of \$72.09 per share (2016 – \$52.34) for a total amount of approximately \$1,009 million (2016 – \$80 million).

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. Purchases under the 2017 NCIB will terminate upon the earlier of: (i) the Bank purchasing the maximum number of common shares under the NCIB, (ii) the Bank providing a notice of termination, or (iii) June 1, 2018. On a quarterly basis, the Bank will notify OSFI prior to making purchases. Under this bid, the Bank has repurchased and cancelled 4 million common shares at an average price of approximately \$74.83 per share.

On May 31, 2016, the Bank announced that OSFI and the TSX approved a normal course issuer bid (the "2016 NCIB") pursuant to which it may repurchase for cancellation up to 12 million of the Bank's common shares. The 2016 NCIB terminated on June 1, 2017. On January 4, 2017 and March 17, 2017 the TSX approved amendments to the 2016 NCIB, including to allow the Bank to purchase common shares by private agreement or under a specific share repurchase program, respectively. Under the 2016 NCIB, the Bank repurchased and cancelled 10 million common shares at an average price of approximately \$71.00 per share.



Share data and other capital instruments

The Bank's common and preferred share data, as well as other capital instruments, are shown in T26. Further details, including exchangeability features, are discussed in Note 20 and Note 23 of the Consolidated Financial Statements.

T26 Shares and other instruments

As at October 31, 2017	Amount (\$ millions)	Dividends declared per share <sup>(1)</sup>	Number outstanding (000s)	Conversion features
<b>Common shares<sup>(2)</sup></b>	\$ 15,644	\$ 3.05	1,199,232	n/a
<b>Preferred shares</b>				
Preferred shares Series 16 <sup>(3)</sup>	—	—	—	—
Preferred shares Series 17 <sup>(3)</sup>	—	—	—	—
Preferred shares Series 18 <sup>(4)(5)(6)</sup>	187	0.837500	7,498	Series 19
Preferred shares Series 19 <sup>(4)(5)(7)</sup>	158	0.642626	6,302	Series 18
Preferred shares Series 20 <sup>(4)(5)(8)</sup>	201	0.902500	8,039	Series 21
Preferred shares Series 21 <sup>(4)(5)(9)</sup>	149	0.554501	5,961	Series 20
Preferred shares Series 22 <sup>(4)(5)(10)</sup>	234	0.957500	9,377	Series 23
Preferred shares Series 23 <sup>(4)(5)(11)</sup>	66	0.600126	2,623	Series 22
Preferred shares Series 30 <sup>(4)(5)(12)</sup>	154	0.455000	6,143	Series 31
Preferred shares Series 31 <sup>(4)(5)(13)</sup>	111	0.380126	4,457	Series 30
Preferred shares Series 32 <sup>(4)(5)(14)</sup>	279	0.515752	11,161	Series 33
Preferred shares Series 33 <sup>(4)(5)(15)</sup>	130	0.465159	5,184	Series 32
Preferred shares Series 34 <sup>(4)(5)(16)(17)</sup>	350	1.375000	14,000	Series 35
Preferred shares Series 36 <sup>(4)(5)(16)(18)</sup>	500	1.375000	20,000	Series 37
Preferred shares Series 38 <sup>(4)(5)(16)(19)</sup>	500	1.351175	20,000	Series 39
<b>Additional Tier 1 securities</b>	<b>Amount (\$ millions)</b>	<b>Distribution<sup>(20)</sup></b>	<b>Yield (%)</b>	<b>Number outstanding (000s)</b>
Scotiabank Trust Securities – Series 2006-1 issued by Scotiabank Capital Trust <sup>(21a,c,d)</sup>	\$ 750	28.25	5.650	750
Scotiabank Tier 1 Securities – Series 2009-1 issued by Scotiabank Tier 1 Trust <sup>(21b,c,d)</sup>	650	39.01	7.802	650
Subordinated additional Tier 1 capital securities (NVCC) <sup>(22)</sup>	US\$ 1,250	US\$ 23.25	4.650	1,250
<b>NVCC subordinated debentures</b>			<b>Amount (\$ millions)</b>	<b>Interest Rate (%)</b>
Subordinated debentures due March 2027			\$ 1,250	2.58
Subordinated debentures due December 2025			750	3.37
Subordinated debentures due December 2025			US\$ 1,250	4.50
<b>Options</b>			<b>Number outstanding (000s)</b>	
Outstanding options granted under the Stock Option Plans to purchase common shares <sup>(2)(23)</sup>			15,555	

(1) Dividends declared as at August 29, 2017.

(2) Dividends on common shares are paid quarterly, if and when declared. As at November 17, 2017, the number of outstanding common shares and options was 1,199,380 thousand and 15,345 thousand, respectively.

(3) On January 27, 2017 and on April 26, 2017, the Bank redeemed all outstanding Non-cumulative Preferred shares Series 16 and Series 17 and paid dividends of \$0.328125 and \$0.350000 per share respectively.

(4) These preferred shares are entitled to non-cumulative preferential cash dividends payable quarterly. Refer to Note 23 of the Consolidated Financial Statements in the Bank's 2017 Annual Report for further details.

(5) These preferred shares have conversion features. Refer to Note 23 of the Consolidated Financial Statements in the Bank's 2017 Annual Report for further details.

(6) Subsequent to the initial five-year fixed rate period which ended on April 25, 2013, and resetting every five years thereafter, the dividends, if and when declared, will be determined by the sum of the five-year Government of Canada Yield plus 2.05%, multiplied by \$25.00.

(7) Dividends, if and when declared, are determined by the sum of the three-month Government of Canada Treasury Bill Yield plus 2.05%, multiplied by \$25.00, which will be reset quarterly.

(8) Subsequent to the initial five-year fixed rate period which ended on October 25, 2013, and resetting every five years thereafter, the dividends, if and when declared, will be determined by the sum of the five-year Government of Canada Yield plus 1.70%, multiplied by \$25.00.

(9) Dividends, if and when declared, are determined by the sum of the three-month Government of Canada Treasury Bill Yield plus 1.70%, multiplied by \$25.00, which will be reset quarterly.

(10) Subsequent to the initial five-year fixed rate period which ended on January 25, 2014, and resetting every five years thereafter, the dividends, if and when declared, will be determined by the sum of the five-year Government of Canada Yield plus 1.88%, multiplied by \$25.00.

(11) Dividends, if and when declared, are determined by the sum of the three-month Government of Canada Treasury Bill Yield plus 1.88%, multiplied by \$25.00, which will be reset quarterly.

(12) Subsequent to the initial five-year fixed rate period which ended on April 25, 2015, and resetting every five years thereafter, the dividends, if and when declared, will be determined by the sum of the five-year Government of Canada Yield plus 1.00%, multiplied by \$25.00.

(13) Dividends, if and when declared, are determined by the sum of the three-month Government of Canada Treasury Bill Yield plus 1.00%, multiplied by \$25.00, which will be reset quarterly.

(14) Subsequent to the initial five-year fixed rate period which ended on February 1, 2016, and resetting every five years thereafter, the dividends, if and when declared, will be determined by the sum of the five-year Government of Canada Yield plus 1.34%, multiplied by \$25.00.

(15) Dividends, if and when declared, are determined by the sum of the three-month Government of Canada Treasury Bill Yield plus 1.34%, multiplied by \$25.00, which will be reset quarterly.

(16) These preferred shares contain Non-Viability Contingent Capital (NVCC) provisions necessary for the shares to qualify as Tier 1 regulatory capital under Basel III. Refer to Note 23 of the Consolidated Financial Statements in the Bank's 2017 Annual Report for further details.

(17) Subsequent to the initial five-year fixed rate period ending on April 25, 2021, and resetting every five years thereafter, the dividends, if and when declared, will be determined by the sum of the five-year Government of Canada Yield plus 4.51%, multiplied by \$25.00.

(18) Subsequent to the initial five-year fixed rate period ending on July 25, 2021, and resetting every five years thereafter, the dividends, if and when declared, will be determined by the sum of the five-year Government of Canada Yield plus 4.72%, multiplied by \$25.00.

(19) Subsequent to the initial five-year fixed rate period ending on January 26, 2022, and resetting every five years thereafter, the dividends, if and when declared, will be determined by the sum of the five-year Government of Canada Yield plus 4.19%, multiplied by \$25.00.

(20) Per face amount of \$1,000 or US\$1,000, as applicable.

(21)(a) On September 28, 2006, Scotiabank Capital Trust issued 750,000 Scotiabank Trust Securities – Series 2006-1 (Scotia BaTS II Series 2006-1). The holders of Scotia BaTS II Series 2006-1 are entitled to receive non-cumulative fixed cash distributions payable semi-annually in an amount of \$28.25 per security. With regulatory approval, these securities may be redeemed in whole upon the occurrence of certain tax or regulatory capital changes, or in whole or in part on December 30, 2011 and on any distribution date thereafter at the option of Scotiabank Capital Trust. The holder has the right at any time to exchange their security into Non-cumulative Preferred Shares Series S of the Bank. The Series S shares will be entitled to cash dividends payable semi-annually in an amount of \$0.4875 per \$25.00 share [refer to Note 23 – Restrictions on dividend payments in the Bank's 2017 Annual Report]. Under the circumstances outlined in 21(c) below, the Scotia BaTS II Series 2006-1 would be automatically exchanged without the consent of the holder, into Non-cumulative Preferred Shares Series T of the Bank. The Series T shares will be entitled to non-cumulative cash dividends payable semi-annually in an amount of \$0.625 per \$25.00 share. If there is an automatic exchange of the Scotia BaTS II Series 2006-1 into Preferred Shares Series T of the Bank, then the Bank would become the sole beneficiary of the Trust.

(21)(b) On May 7, 2009, Scotiabank Tier 1 Trust issued 650,000 Scotiabank Tier 1 Securities Series 2009-1 (Scotia BaTS III Series 2009-1). Interest is payable semi-annually in an amount of \$39.01 per Scotia BaTS III Series 2009-1 on the last day of June and December until June 30, 2019. After June 30, 2019 and on every fifth anniversary thereafter until June 30, 2104, the interest rate on the Scotia BaTS III Series 2009-1 will be reset at an interest rate per annum equal to the then prevailing 5-year Government of Canada Yield plus 7.05%. On or after June 30, 2014, the Trust may, at its option redeem the Scotia BaTS III Series 2009-1, in whole or in part, subject to regulatory approval. Under the circumstances outlined in 21(c) below, the Scotia BaTS III Series 2009-1, including accrued and unpaid interest thereon, would be exchanged automatically without the consent of the holder, into newly issued Non-cumulative Preferred Shares Series R of the Bank. In addition, in certain circumstances, holders of Scotia BaTS III Series 2009-1 may be required to invest interest paid on the Scotia BaTS III Series 2009-1 in a series of newly-issued preferred shares of the Bank with non-cumulative dividends (each such series is referred to as Bank Deferral Preferred Shares). If there is an automatic exchange of the Scotia BaTS III Series 2009-1 into Preferred Shares Series R of the Bank, then the Bank would become the sole beneficiary of the Trust.

- (21)(c) The Scotia BaTS II Series 2006-1 and Scotia BaTS III Series 2009-1 may be automatically exchanged, without the consent of the holder, into Non-cumulative Preferred Shares of the Bank in the following circumstances:
- (i) proceedings are commenced for the winding-up of the Bank; (ii) the Superintendent takes control of the Bank or its assets; (iii) the Bank has a Tier 1 Capital ratio of less than 5% or a Total Capital ratio of less than 8%; or (iv) the Superintendent has directed the Bank to increase its capital or provide additional liquidity and the Bank elects such automatic exchange or the Bank fails to comply with such direction.
- (21)(d) No cash distributions will be payable on the Scotia BaTS II Series 2006-1 and Scotia BaTS III Series 2009-1 in the event that the regular dividend is not declared on the Bank's preferred shares and, if no preferred shares are outstanding, the Bank's common shares. In such a circumstance the net distributable funds of the Trust will be payable to the Bank as the holder of the residual interest in the Trust. Should the Trust fail to pay the semi-annual distributions on the Scotia BaTS II Series 2006-1 and Scotia BaTS III Series 2009-1 in full, the Bank will not declare dividends, of any kind on any of its preferred or common shares for a specified period of time [refer to Note 23 – Restrictions on dividend payments].
- (22) On October 12, 2017, the Bank issued US\$1.25 billion 4.650% fixed to floating rate non-cumulative subordinated additional Tier 1 capital securities (NVCC). Refer to Note 23(b) – Preferred shares and other equity instruments.
- (23) Included are 5,900 stock options with tandem stock appreciation rights (Tandem SAR) features.

## Credit ratings

Credit ratings are one of the factors that impact the Bank's access to capital markets and borrowing costs, as well as the terms on which the Bank can conduct derivatives and hedging transactions and obtain related borrowings. The credit ratings and outlook that the rating agencies assign to the Bank are based on their own views and methodologies.

On May 10, 2017, Moody's downgraded the long-term ratings of all Canadian banks, citing concerns around expanding levels of private sector debt, which could increase the likelihood of weaker asset quality in the future. Moody's downgraded the Bank's long-term ratings by one notch to A1 from Aa3, while affirming the Bank's short-term deposit rating of P-1.

The Bank continues to have strong credit ratings and is rated AA by DBRS, A1 by Moody's, AA- by Fitch and A+ by Standard and Poor's (S&P). Fitch and S&P have a stable outlook on the Bank. Meanwhile, DBRS and Moody's continue to maintain their negative outlook for all Canadian banks citing the uncertainty around the federal government's proposed new bail-in regime for senior unsecured debt, to reflect the greater likelihood that such debt may incur losses in the unlikely event of a distress scenario. (Refer to Shareholder Information section for ratings of other securities).

## Risk-weighted assets

Regulatory capital requirements are based on OSFI's target minimum percentage of risk-weighted assets (RWA). RWA represent the Bank's exposure to credit, market and operational risk and are computed by applying a combination of the OSFI approved Bank's internal risk models and OSFI prescribed risk weights to on- and off-balance sheet exposures. CET1, Tier 1 and Total Capital RWA were \$376.4 billion at year end, representing increases from 2016 of approximately \$12.3 billion, \$11.9 billion and \$11.5 billion, respectively.

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.

Increases to CET1, Tier 1 and Total Capital RWA during the year are due to Basel I floor adjustments of \$12.8 billion, \$12.6 billion and \$12.4 billion, respectively, and higher operational risk RWA of \$1.9 billion, and credit risk RWA of approximately \$0.3 billion (including the impact of foreign currency translation of -\$6.9 billion), partly offset by lower market risk RWA of \$2.7 billion.

## CET1 Credit risk-weighted assets

As shown in Table T27, CET1 credit risk-weighted assets increased by approximately \$0.3 billion to \$315.2 billion primarily due to the following components:

- Higher volumes increased RWA by \$14.2 billion;
- Book quality changes, including parameter recalibrations, reduced RWA by \$5.8 billion;
- Model updates decreased RWA by \$2.2 billion;
- Implementation of methodology and policy changes during the year increased RWA by \$1.1 billion; and,
- The impact of foreign exchange translation decreased RWA by \$6.9 billion.

**T27** Flow statement for Basel III All-in credit risk-weighted assets (\$ millions)

Credit risk-weighted assets movement by key driver <sup>(1)</sup> (\$ millions)	2017		2016	
	Credit risk	Of which counterparty credit risk	Credit risk	Of which counterparty credit risk
CET1 Credit risk-weighted assets as at beginning of year	\$ 314,822	\$ 16,432	\$ 308,035	\$ 22,940
Book size <sup>(2)</sup>	14,219	797	1,781	(4,082)
Book quality <sup>(3)</sup>	(5,812)	(1,209)	10,542	740
Model updates <sup>(4)</sup>	(2,248)	219	(3,214)	(3,214)
Methodology and policy <sup>(5)</sup>	1,062	521	(2,849)	–
Acquisitions and disposals	–	–	1,672	–
Foreign exchange movements	(6,884)	(266)	2,731	48
Other	–	–	(3,876)	–
CET1 Credit risk-weighted assets as at end of year <sup>(6)</sup>	\$ 315,159	\$ 16,494	\$ 314,822	\$ 16,432
Tier 1 CVA scalar	208	208	456	456
Tier 1 Credit risk-weighted assets as at end of year <sup>(6)</sup>	315,367	16,702	315,278	16,888
Total CVA scalar	166	166	390	390
Total Credit risk-weighted assets as at end of year <sup>(6)</sup>	\$ 315,533	\$ 16,868	\$ 315,668	\$ 17,278

(1) Includes counterparty credit risk.

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

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

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

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

(6) As at October 31, 2017, risk-weighted assets were calculated using scalars of 0.72, 0.77, and 0.81 to compute CET1, Tier 1, and Total capital ratios, respectively, (scalars were 0.64, 0.71, and 0.77 in 2016).

**T28** Internal rating scale<sup>(1)</sup> and mapping to external rating agencies

Equivalent Rating

External Rating – S&P	External Rating – Moody's	External Rating – DBRS	Grade	IG Code	PD Range <sup>(2)</sup>
AAA to AA+	Aaa to Aa1	AAA to AA (high)		99-98	0.0000% – 0.0448%
AA to A+	Aa2 to A1	AA to A (high)	Investment	95	0.0448% – 0.1304%
A to A-	A2 to A3	A to A (low)	grade	90	0.0552% – 0.1402%
BBB+	Baa1	BBB (high)		87	0.0876% – 0.2187%
BBB	Baa2	BBB		85	0.1251% – 0.3176%
BBB-	Baa3	BBB (low)		83	0.1788% – 0.4610%
BB+	Ba1	BB (high)		80	0.2886% – 0.5134%
BB	Ba2	BB		77	0.4658% – 0.5716%
BB-	Ba3	BB (low)	Non-Investment	75	0.5716% – 0.7518%
B+	B1	B (high)	grade	73	0.7518% – 1.4444%
B to B-	B2 to B3	B to B (low)		70	1.4444% – 2.7749%
CCC+	Caa1	–		65	2.7749% – 10.1814%
CCC	Caa2	–	Watch list	60	10.1814% – 19.4452%
CCC- to CC	Caa3 to Ca	–		40	19.4452% – 35.4088%
–	–	–		30	35.4088% – 59.5053%
Default	–	–	Default	27-21	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.

**T29** Non-retail AIRB portfolio exposure by internal rating grade<sup>(1)(2)</sup>

As at October 31 (\$ millions)		2017					2016				
Grade	IG Code	Exposure at default (\$) <sup>(4)</sup>	RWA (\$)	PD (%) <sup>(5)(8)</sup>	LGD (%) <sup>(6)(8)</sup>	RW (%) <sup>(7)(8)</sup>	Exposure at default (\$) <sup>(4)</sup>	RWA (\$)	PD (%) <sup>(5)(8)</sup>	LGD (%) <sup>(6)(8)</sup>	RW (%) <sup>(7)(8)</sup>
Investment grade <sup>(3)</sup>	99-98	79,908	930	0.01	11	1	66,127	878	0.01	18	1
	95	46,871	5,816	0.05	33	12	45,031	6,458	0.06	30	14
	90	56,472	9,190	0.07	35	16	52,357	8,540	0.07	37	16
	87	44,533	10,229	0.11	38	23	42,398	10,326	0.13	37	24
	85	40,379	13,229	0.16	43	33	40,162	14,189	0.18	41	35
	83	41,488	17,796	0.25	44	43	37,926	16,704	0.25	44	44
Non-Investment grade	80	36,235	18,701	0.35	44	52	36,135	20,502	0.36	46	57
	77	23,045	13,167	0.50	42	57	23,941	14,955	0.51	43	62
	75	20,085	13,703	0.75	43	68	15,941	11,830	0.74	46	74
	73	7,271	5,608	1.44	35	77	7,307	6,063	1.42	40	83
	70	3,758	3,666	2.77	37	98	4,692	4,682	2.73	43	100
Watch list	65	2,167	2,136	10.18	25	99	1,297	2,078	9.99	41	160
	60	761	1,454	19.45	38	191	1,221	2,447	19.05	40	200
	40	1,311	2,647	30.74	38	202	2,465	4,901	28.77	37	199
	30	159	220	58.44	36	138	100	178	59.28	43	178
Default <sup>(9)</sup>	27-21	1,752	6,298	100	44	359	2,520	8,106	100	42	322
Total		406,195	124,790	0.86	34	31	379,620	132,837	1.20	36	35
Government guaranteed residential mortgages		91,737	–	–	35	–	100,869	–	–	25	–
Total		497,932	124,790	0.70	34	25	480,489	132,837	0.95	34	28

(1) Refer to the Bank's Supplementary Regulatory Capital Disclosures for a more detailed breakdown by asset class, exposure at default, probability at default, loss given default and risk weighting.

(2) Excludes securitization exposures.

(3) Excludes government guaranteed residential mortgages of \$91.7 billion (\$100.9 billion in 2016).

(4) After credit risk mitigation.

(5) PD – Probability of Default.

(6) LGD – Loss Given Default.

(7) RW – Risk Weight.

(8) Exposure at default used as basis for estimated weightings.

(9) Gross defaulted exposures, before any related allowances.

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

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

- Probability of default (PD) measures the likelihood that a borrower, with an assigned Internal Grade (IG) code, will default within a one-year time horizon. IG codes are a component of the Bank's risk rating system. Each of the Bank's internal borrower IG codes is mapped to a PD estimate.

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

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

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

These risk measures are used in the calculation of regulatory capital requirements based on formulas specified by the Basel framework. The credit quality distribution of the Bank's AIRB non-retail portfolio is shown in Table T29.

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

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

Portfolio-level back-testing results, based on a comparison of estimated and realized parameters for the four-quarter period ended at July 31, 2017, are shown in Table T30.

**T30** Portfolio-level comparison of estimated and actual non-retail percentages

	Estimated <sup>(1)</sup>	Actual
Average PD	0.92	0.40
Average LGD	41.59	22.18
Average CCF <sup>(2)</sup>	51.28	5.69

(1) Estimated parameters are based on portfolio averages at Q3/16, whereas actual parameters are based on averages of realized parameters during the subsequent four quarters.

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

### Credit risk-weighted assets – Canadian retail

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

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

For the AIRB portfolios, the following models and parameters are estimated:

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

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

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

The table below summarizes the credit quality distribution of the Bank's AIRB retail portfolio as at October 31, 2017.

**T31** Retail AIRB portfolio exposure by PD range<sup>(1)(2)</sup>

As at October 31 (\$ millions)		2017					2016				
Category	PD Range	Exposure at default (\$) <sup>(2)</sup>	RWA (\$)	PD (%) <sup>(3)(6)</sup>	LGD (%) <sup>(4)(6)</sup>	RW (%) <sup>(5)(6)</sup>	Exposure at default (\$) <sup>(2)</sup>	RWA (\$)	PD (%) <sup>(3)(6)</sup>	LGD (%) <sup>(4)(6)</sup>	RW (%) <sup>(5)(6)</sup>
Exceptionally low	0.0000% – 0.0499%	16,026	476	0.05	66	3	44,356	964	0.04	30	2
Very low	0.0500% – 0.1999%	80,507	4,059	0.09	28	5	59,509	4,417	0.15	31	7
Low	0.2000% – 0.9999%	94,081	19,638	0.52	35	21	52,261	12,483	0.54	42	24
Medium low	1.0000% – 2.9999%	17,070	9,919	1.91	57	58	20,851	10,961	1.75	53	53
Medium	3.0000% – 9.9999%	8,583	8,827	5.56	75	103	6,265	6,028	5.34	61	96
High	10.0000% – 19.9999%	889	1,086	17.18	43	122	1,997	2,926	10.77	67	147
Extremely high	20.0000% – 99.9999%	1,453	2,566	36.86	62	177	2,312	3,682	35.12	56	159
Default <sup>(7)</sup>	100%	607	–	100.00	79	–	677	–	100.00	74	–
<b>Total</b>		<b>219,216</b>	<b>46,571</b>	<b>1.21</b>	<b>38</b>	<b>21</b>	<b>188,228</b>	<b>41,461</b>	<b>1.48</b>	<b>38</b>	<b>22</b>

(1) Refer to the Bank's Supplementary Regulatory Capital Disclosures for a more detailed breakdown by asset class, exposure at default, probability at default, loss given default and risk-weighting.

(2) After credit risk mitigation.

(3) PD – Probability of Default.

(4) LGD – Loss Given Default.

(5) RW – Risk Weight.

(6) Exposure at default used as basis for estimated weightings.

(7) Gross defaulted exposures, before any related allowances.

All AIRB models and parameters are monitored on a quarterly basis and independently validated annually by the Global Risk Management group. These models are tested to ensure rank ordering and back testing of parameters is appropriate. Comparison of estimated and actual loss parameters for the period ended July 31, 2017 is shown in Table T32. During this period the actual experience was significantly better than the estimated risk parameters.

**T32** Estimated and actual loss parameters<sup>(1)</sup>

(\$ millions)	Average estimated PD (%) <sup>(2)(7)</sup>	Actual default rate (%) <sup>(2)(5)</sup>	Average estimated LGD (%) <sup>(3)(7)</sup>	Actual LGD (%) <sup>(3)(6)</sup>	Estimated EAD (\$) <sup>(4)(7)</sup>	Actual EAD (\$) <sup>(4)(5)</sup>
Residential real estate secured						
Residential mortgages						
Insured mortgages <sup>(8)</sup>	0.69	0.59	–	–	–	–
Uninsured mortgages	0.46	0.44	18.12	10.82	–	–
Secured lines of credit	0.77	0.32	28.95	13.95	107	92
Qualifying revolving retail exposures	2.14	1.92	77.54	63.91	743	650
Other retail	2.21	1.32	58.90	47.12	8	8

(1) Estimates and actual values are recalculated to align with new models implemented during the period.

(2) Account weighted aggregation.

(3) Default weighted aggregation.

(4) EAD is estimated for revolving products only.

(5) Actual based on accounts not at default as at four quarters prior to reporting date.

(6) Actual LGD calculated based on 24 month recovery period after default and therefore excludes any recoveries received after the 24 month period.

(7) Estimates are based on the four quarters prior to the reporting date.

(8) Actual and estimated LGD for insured mortgages are not shown. Actual LGD includes the insurance benefit, whereas estimated LGD may not.

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

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

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

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

**Market risk**

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

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

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

Below are the market risk requirements as at October 31, 2017 and 2016:

### T33 Total market risk capital

(\$ millions)	2017	2016
All-Bank VaR	\$ 110	\$ 105
All-Bank stressed VaR	300	209
Incremental risk charge	174	407
Comprehensive risk measure	–	77
Standardized approach	43	48
<b>Total market risk capital<sup>(1)</sup></b>	<b>\$ 627</b>	<b>\$ 846</b>

(1) Equates to \$7,839 million of market risk-weighted assets (2016 – \$10,571 million).

### T34 Risk-weighted assets movement by key drivers

(\$ millions)	Market risk	
	2017	2016
RWA as at beginning of the year	\$10,571	\$14,350
Movement in risk levels <sup>(1)</sup>	(2,774)	(5,018)
Model updates <sup>(2)</sup>	42	1,239
Methodology and policy <sup>(3)</sup>	–	–
<b>RWA as at end of the year</b>	<b>\$ 7,839</b>	<b>\$10,571</b>

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

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

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

Market risk-weighted assets decreased by \$2.7 billion to \$7.8 billion as shown in Table T34 due primarily to a reduction in incremental risk charge from a reduced exposure in Latin America.

### Operational risk

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

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

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

Operational risk-weighted assets increased by \$1.9 billion during the year to \$40.6 billion primarily due to organic growth in gross income.

### Internal capital

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

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

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

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

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

### Off-Balance Sheet Arrangements

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

### Structured entities

Arrangements with structured entities include structured entities that are used to provide a wide range of services to customers, such as structured entities established to allow clients to securitize their financial assets while facilitating cost-efficient financing, and to provide certain investment opportunities. The Bank creates, administers and manages personal and corporate trusts on behalf of its customers. The Bank also sponsors and actively manages certain structured entities (see discussion on other unconsolidated structured entities on page 55).

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

### Consolidated structured entities

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

As at October 31, 2017, total assets of consolidated structured entities were \$53 billion, compared to \$59 billion at the end of 2016. The change was primarily due to decreased assets in Scotiabank Covered Bond Guarantor Limited Partnership and assets that matured in other structured entities. More details of the Bank's consolidated structured entities are provided in Note 14(a) to the consolidated financial statements.

### Unconsolidated structured entities

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

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

The Bank earned total fees of \$30 million in 2017 (October 31, 2016 – \$23 million) from certain structured entities in which it had a significant interest at the end of the year but did not consolidate. More information with respect to the Bank's involvement with these unconsolidated structured entities, including details of liquidity facilities and maximum loss exposure by category is provided below and in Note 14(b) to the consolidated financial statements.

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

The Bank sponsors two Canadian-based multi-seller conduits that are not consolidated. The Bank earned commercial paper issuance fees, program management fees, liquidity fees and other fees from these multi-seller conduits, which totaled \$29 million in 2017, compared to \$22 million in 2016. These multi-seller conduits purchase high-quality financial assets and finance these assets through the issuance of highly-rated commercial paper.

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

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

The Bank's primary exposure to the Canadian-based conduits is the liquidity support provided, with total liquidity facilities of \$5 billion as at October 31, 2017 (October 31, 2016 – \$5.8 billion). The year-over-year decrease was due to normal business operations. As at October 31, 2017, total commercial paper outstanding for the Canadian-based conduits was \$3.1 billion (October 31, 2016 – \$4.4 billion) and the Bank held less than 0.01% of the total commercial paper issued by these conduits. Table T35 presents a summary of assets purchased and held by the Bank's two Canadian multi-seller conduits as at October 31, 2017 and 2016, by underlying exposure.

All of the funded assets have at least an equivalent rating of AA– or higher based on the Bank's internal rating program. Assets held in these conduits were investment grade as at October 31, 2017. Approximately 83% of the funded assets have final maturities falling within three years, and the weighted-average repayment period, based on cash flows, approximates 1.4 years.

#### T35 Assets held by Scotiabank-sponsored Canadian-based multi-seller conduits

As at October 31 (\$ millions)	2017			2016		
	Funded assets <sup>(1)</sup>	Unfunded commitments	Total exposure <sup>(2)</sup>	Funded assets <sup>(1)</sup>	Unfunded commitments	Total exposure <sup>(2)</sup>
Auto loans/leases	\$ 2,447	\$ 464	\$ 2,911	\$ 3,168	\$ 601	\$ 3,769
Trade receivables	161	649	810	131	618	749
Canadian residential mortgages	519	756	1,275	1,081	194	1,275
Equipment loans/leases	–	–	–	21	–	21
Total <sup>(3)</sup>	\$ 3,127	\$ 1,869	\$ 4,996	\$ 4,401	\$ 1,413	\$ 5,814

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

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

(3) These assets are substantially sourced from Canada.



### Structured finance entities

The Bank has interests in structured finance entities used to assist corporate clients in accessing cost-efficient financing through their securitization structures. The Bank's maximum exposure to loss from structured finance entities was \$1,827 million as at October 31, 2017, (October 31, 2016 – \$2,326 million). The change was primarily due to structures that matured during the year.

### Other unconsolidated structured entities

The Bank sponsors unconsolidated structured entities including mutual funds, in which it has insignificant or no interest at the reporting date. The Bank is a sponsor when it is significantly involved in the design and formation at inception of the structured entity, and the Bank's name is used by the structured entity to create an awareness of the instruments being backed by the Bank's reputation and obligation. The Bank also considers other factors, such as its continuing involvement and obligations to determine if, in substance, the Bank is a sponsor. For the year ended October 31, 2017, the Bank earned \$2,021 million income from its involvement with the unconsolidated Bank-sponsored structured entities, a majority of which is from Bank-sponsored mutual funds (for the year ended October 31, 2016 – \$1,968 million).

### Securitizations

The Bank securitizes fully insured residential mortgage loans, Bank originated and others, through the creation of mortgage backed securities that are sold to Canada Housing Trust (CHT) and/or third party investors. The sale of such mortgages does not qualify for derecognition with the exception of social housing mortgage pools. The outstanding amount of off-balance sheet securitized social housing pools was \$1,264 million as at October 31, 2017, compared to \$1,237 million last year. The transferred mortgages sold to CHT and/or third party investors continue to be recognized on balance sheet along with the proceeds from sale treated as secured borrowings. More details have been provided in Note 13 to the consolidated financial statements.

The Bank securitizes a portion of its Canadian lines of credit and credit card receivables (receivables) through two Bank-sponsored structured entities. The receivables are comprised of unsecured personal lines of credit, securitized through Hollis Receivables Term Trust II (Hollis), and personal and small business credit card receivables, securitized through Trillium Credit Card Trust II (Trillium). Hollis and Trillium issue Class A notes to third-party investors and subordinated notes to the Bank, and the proceeds of such issuances are used to purchase co-ownership interests in the respective receivables originated by the Bank. The sale of such co-ownership interests does not qualify for derecognition and therefore the receivables continue to be recognized on the Consolidated Statement of Financial Position. Recourse of the note holders is limited to the purchased co-ownership interests. During the year, no receivables were securitized through Hollis (2016 – nil) or Trillium (2016 – \$1,242 million). As at October 31, 2017, the outstanding subordinated notes issued by Hollis of \$205 million (2016 – \$297 million) and Trillium of \$99 million (2016 – \$99 million), both held by the Bank, are eliminated on consolidation.

The Bank securitizes a portion of its Canadian auto loan receivables (receivables) through Securitized Term Auto Receivables Trust 2016-1, 2017-1 and 2017-2 (START) Bank-sponsored structured entities. The START entities issue multiple series of Class A notes to third-party investors and subordinated notes to the Bank, and the proceeds of such issuances are used to purchase discrete pools of retail indirect auto loan receivables from the Bank on a fully serviced basis. The sale of such pools does not qualify for derecognition and therefore the receivables continue to be recognized on the Consolidated Statement of Financial Position. Recourse of the note holders is limited to the receivables. During the year, assets of \$2,176 million were securitized through the START program (2016 – \$740 million). As at October 31, 2017, the outstanding subordinated notes issued by the START entities of \$178 million (2016 – \$45 million), held by the Bank, are eliminated on consolidation.

### Guarantees and other commitments

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

- Standby letters of credit and letters of guarantee. As at October 31, 2017, these amounted to \$36 billion, compared to \$35 billion last year. These instruments are issued at the request of a Bank customer to secure the customer's payment or performance obligations to a third party. The year-over-year increase reflects a general increase in customer activity and the impact of foreign currency translation;
- Liquidity facilities. These generally provide an alternate source of funding to asset-backed commercial paper conduits in the event a general market disruption prevents the conduits from issuing commercial paper or, in some cases, when certain specified conditions or performance measures are not met;
- Indemnification contracts. In the ordinary course of business, the Bank enters into many contracts where it may indemnify contract counterparties for certain aspects of its operations that are dependent on other parties' performance, or if certain events occur. The Bank cannot estimate, in all cases, the maximum potential future amount that may be payable, nor the amount of collateral or assets available under recourse provisions that would mitigate any such payments. Historically, the Bank has not made any significant payments under these indemnities;
- Loan commitments. The Bank has commitments to extend credit, subject to specific conditions, which represent undertakings to make credit available in the form of loans or other financings for specific amounts and maturities. As at October 31, 2017, these commitments amounted to \$186 billion, compared to \$174 billion last year. The year-over-year increase is primarily due to an increase in business activity.

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

Fees from the Bank's guarantees and loan commitment arrangements, recorded as credit fees in other income in the Consolidated Statement of Income, were \$571 million in 2017, compared to \$574 million in the prior year. Detailed information on guarantees and loan commitments is disclosed in Note 34 to the consolidated financial statements.

## Financial Instruments

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

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

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

- available-for-sale securities, net of related hedges,
- derivatives designated as cash flow hedges, and
- net investment hedges.

Gains and losses on available-for-sale securities are recorded in the Consolidated Statement of Income when realized. Gains and losses on cash flow hedges and net investment hedges are recorded in the Consolidated Statement of Income when the hedged item affects income.

All changes in the fair value of derivatives, including embedded derivatives that must be separately accounted for, are recorded in the Consolidated Statement of Income, other than those designated as cash flow and net investment hedges which flow through other comprehensive income. The Bank's accounting policies for derivatives and hedging activities are further described in Note 3 to the consolidated financial statements.

Interest income and expense on non-trading interest-bearing financial instruments are recorded in the Consolidated Statement of Income as part of net interest income. Credit losses resulting from loans are recorded in the provision for credit losses. Interest income and expense, as well as gains and losses, on trading securities and trading loans are recorded in other operating income – trading revenues. Realized gains and losses and write-downs for impairment on available-for-sale debt or equity instruments are recorded in net gain on investment securities within other operating income.

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

A discussion of the Bank's risk management policies and practices can be found in the Risk Management section on pages 58 to 94. In addition, Note 35 to the consolidated financial statements presents the Bank's exposure to credit risk, liquidity risk and market risks arising from financial instruments as well as the Bank's corresponding risk management policies and procedures.

There are various measures that reflect the level of risk associated with the Bank's portfolio of financial instruments. For example, the interest rate risk arising from the Bank's financial instruments can be estimated by calculating the impact of a 100 basis point increase or decrease in interest rates on annual income, and the economic value of shareholders' equity, as described on page 78. For trading activities, Table T46 discloses the average one-day Value at Risk by risk factor. For derivatives, based on the Bank's maturity profile of derivative instruments, only 17% (2016 – 16%) had a term to maturity greater than five years.

Note 9 to the consolidated financial statements provides details about derivatives used in trading and hedging activities, including notional amounts, remaining term to maturity, credit risk and fair values.

The fair value of the Bank's financial instruments is provided in Note 6 to the consolidated financial statements along with a description of how these amounts were determined.

The fair value of the Bank's financial instruments was favourable when compared to their carrying value by \$1,678 million as at October 31, 2017 (October 31, 2016 – favourable \$2,148 million). This difference relates mainly to loan assets, deposit liabilities, subordinated debentures and other liabilities. The year-over-year change in the fair value over carrying value arose mainly from changes in interest rates since origination. Fair value estimates are based on market conditions as at October 31, 2017, and may not be reflective of future fair values. Further information on how fair values are estimated is contained in the section on critical accounting estimates.

Disclosures specific to certain financial instruments designated at fair value through profit and loss can be found in Note 8 to the consolidated financial statements. These designations were made primarily to significantly reduce accounting mismatches.

## Selected Credit Instruments – Publicly Known Risk Items

### Mortgage-backed securities

Total mortgage-backed securities held in the Non-trading and Trading portfolios are shown in Table T36.

#### T36 Mortgage-backed securities

As at October 31 Carrying value (\$ millions)	2017		2016	
	Non-trading portfolio	Trading portfolio	Non-trading portfolio	Trading portfolio
Canadian NHA mortgage-backed securities <sup>(1)</sup>	\$ 1,810	\$ 1,709	\$ 1,591	\$ 1,546
Commercial mortgage-backed securities	–	1	–	57
Other residential mortgage-backed securities	461	–	521	–
<b>Total</b>	<b>\$ 2,271</b>	<b>\$ 1,710</b>	<b>\$ 2,112</b>	<b>\$ 1,603</b>

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

### Collateralized debt obligations

#### Trading portfolio

The Bank held synthetic collateralized debt obligations (CDOs) in its trading portfolio as a result of structuring and managing transactions with clients and other financial institutions. The remaining CDOs had matured during the fiscal year. As shown in Table T37 below, the Bank does not have any CDO in its trading portfolios as at October 31, 2017.

#### T37 Collateralized debt obligations (CDOs)

As at October 31 Outstanding (\$ millions)	2017		2016	
	Notional Amount	Positive/(negative) fair value	Notional Amount	Positive/(negative) fair value
CDOs – sold protection	\$ –	\$ –	\$ 142	\$ 4
CDOs – purchased protection	\$ –	\$ –	\$ –	\$ –

### Other

As at October 31, 2017, the Bank has insignificant exposure to highly leveraged loans awaiting syndication, auction-rate securities, Alt-A type loans, monoline insurance and investments in structured investment vehicles.

# RISK MANAGEMENT

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

## Risk Management Framework

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



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

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

## Risk Management Principles

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

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

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

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

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

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

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

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

## Risk Governance

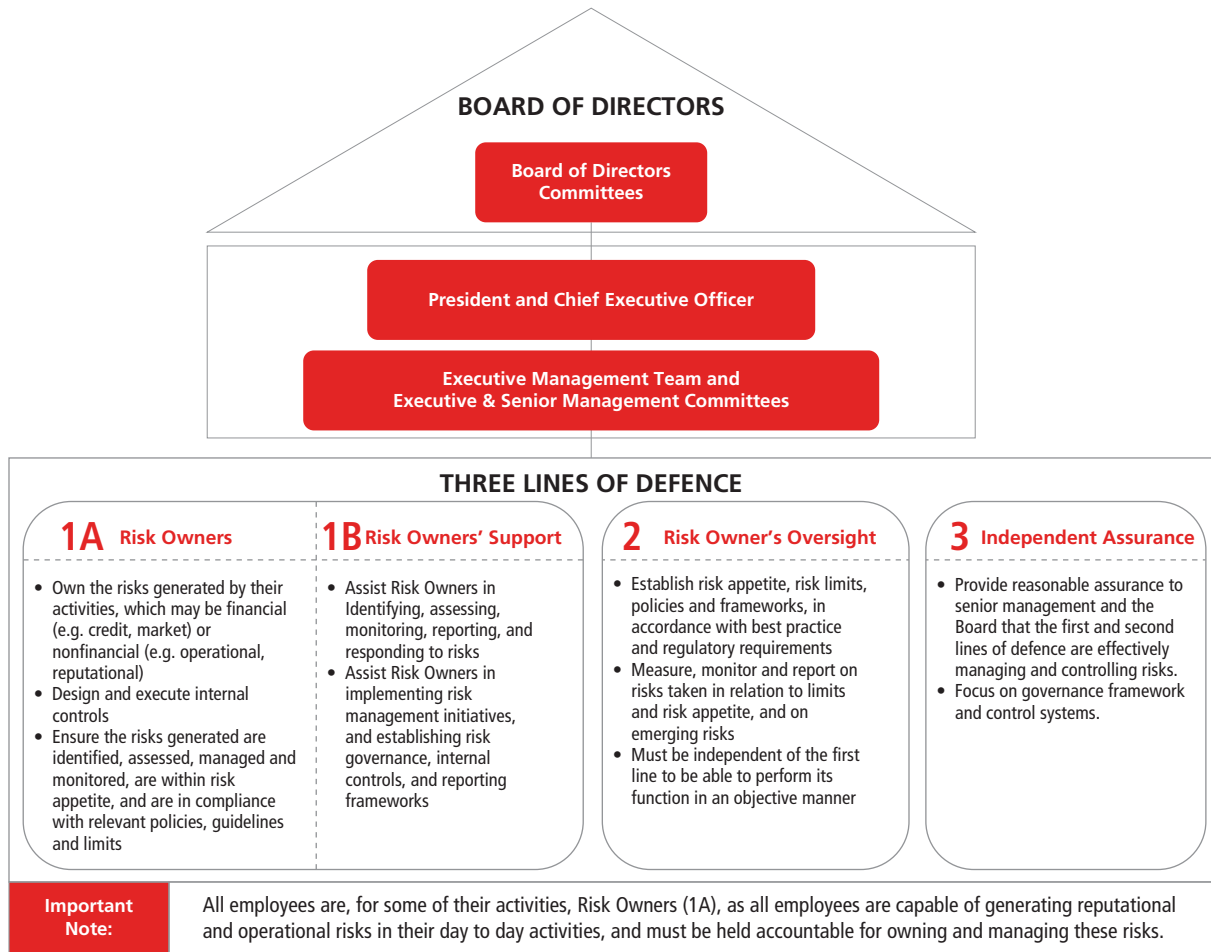
**Effective risk management begins with effective risk governance.**

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

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

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

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



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

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

**Audit Committee of the Board:** assists the Board by providing oversight on the effectiveness of the Bank’s system of internal controls. The Committee oversees the integrity of the Bank’s consolidated financial statements and related quarterly results. The Committee oversees the external auditor’s qualifications, independence and performance, and oversees the Global Finance and Audit functions at the Bank.

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

**Corporate Governance Committee of the Board:** acts in an advisory capacity to the Board to enhance the Bank’s corporate governance through a continuing assessment of the Bank’s approach to corporate governance and makes policy recommendations. The Committee is responsible for the Board succession plan, and for reviewing the Bank’s corporate social responsibility strategy and reporting.

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

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

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

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

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

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

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

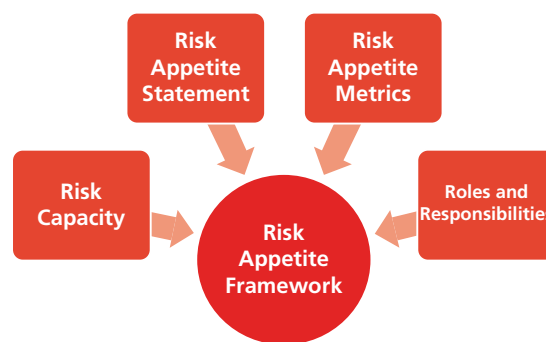
**Business Line and Corporate Functions:** as the first line of defence in the Three Lines of Defence model, are accountable for effective management of the risks within their business lines and functions through identifying, assessing, mitigating and monitoring the risks. Business lines and corporate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

## Risk Appetite

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

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

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



### Risk Appetite Statement

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

1. The Bank favours businesses that generate sustainable, consistent and predictable earnings.
2. The Bank expects to take certain risks in order to generate earnings, but sets limits to ensure risk taking activities are in line with the Bank's strategic objectives, risk culture, and risk appetite.
3. The Bank limits its risk-taking activities to those that are well understood and where there is sufficient expertise, resources and infrastructure to effectively measure and manage the risk and balance risk with reward.

4. Capital considerations are part of all material risk decisions.
5. The Bank has low appetite for reputational, legal, regulatory or taxation risk, and no appetite for breaches of the Code of Conduct.
6. All employees of the Bank are responsible for understanding the limits and any other boundaries that apply to their activities.

### Risk Appetite Metrics

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

Other components of Scotiabank's risk appetite metrics:

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

### Risk Management Tools

Effective risk management includes tools that are guided by the Bank's Enterprise Risk Appetite Framework and integrated with the Bank's strategies and business planning processes.

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

### Policies & Limits

#### Policies

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

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

#### Limits

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

### Risk Measurement

#### Models

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

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

### Monitoring and Reporting

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

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

## Forward-Looking Exercises

### Stress Testing

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

### Other Testing

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

## Risk Identification and Assessment

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

### Principal Risk Types

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

#### Financial Risks:

*Credit, Market, Liquidity, Insurance*

These are risks that the Bank understands well and takes on in order to generate sustainable and predictable earnings. Financial risks are generally quantifiable using widely accepted methodologies and are relatively predictable. The Bank has higher risk appetite for financial risks which are considered to be a fundamental part of doing business; but only when they are well understood, within established limits, and meet the desired risk and return profile.

#### Non-Financial Risks:

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

These are risks that are inherent in our business and must be managed to reduce potential losses. In comparison to financial risks, non-financial risks are less predictable and more difficult to define and measure. If not managed properly, these risks can lead to significant financial losses. The Bank has low risk appetite for non-financial risks and reduces these risks through internal controls and procedures, and continued investments to enhance these internal controls and procedures.

### Assessment of Risks

On a regular basis, the Bank undergoes a Bank-wide risk assessment that measures the materiality of all risks to the Bank. This process evaluates each risk and determines the pervasiveness of the risk across multiple business lines, the significance of the risk to a specific business line, the likelihood and potential impact of the risk and whether the risk may cause unexpected losses in income. The process also reviews other evolving and emerging risks and includes qualitative considerations. The identified risks are ascribed a rating of how probable and impactful they may be and used as an important input in the Internal Capital Adequacy Assessment Process (ICAAP) and the determination of Internal Capital.

### Top and Emerging Risks

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

### Other Considerations

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

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



## Risk Culture

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

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

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

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

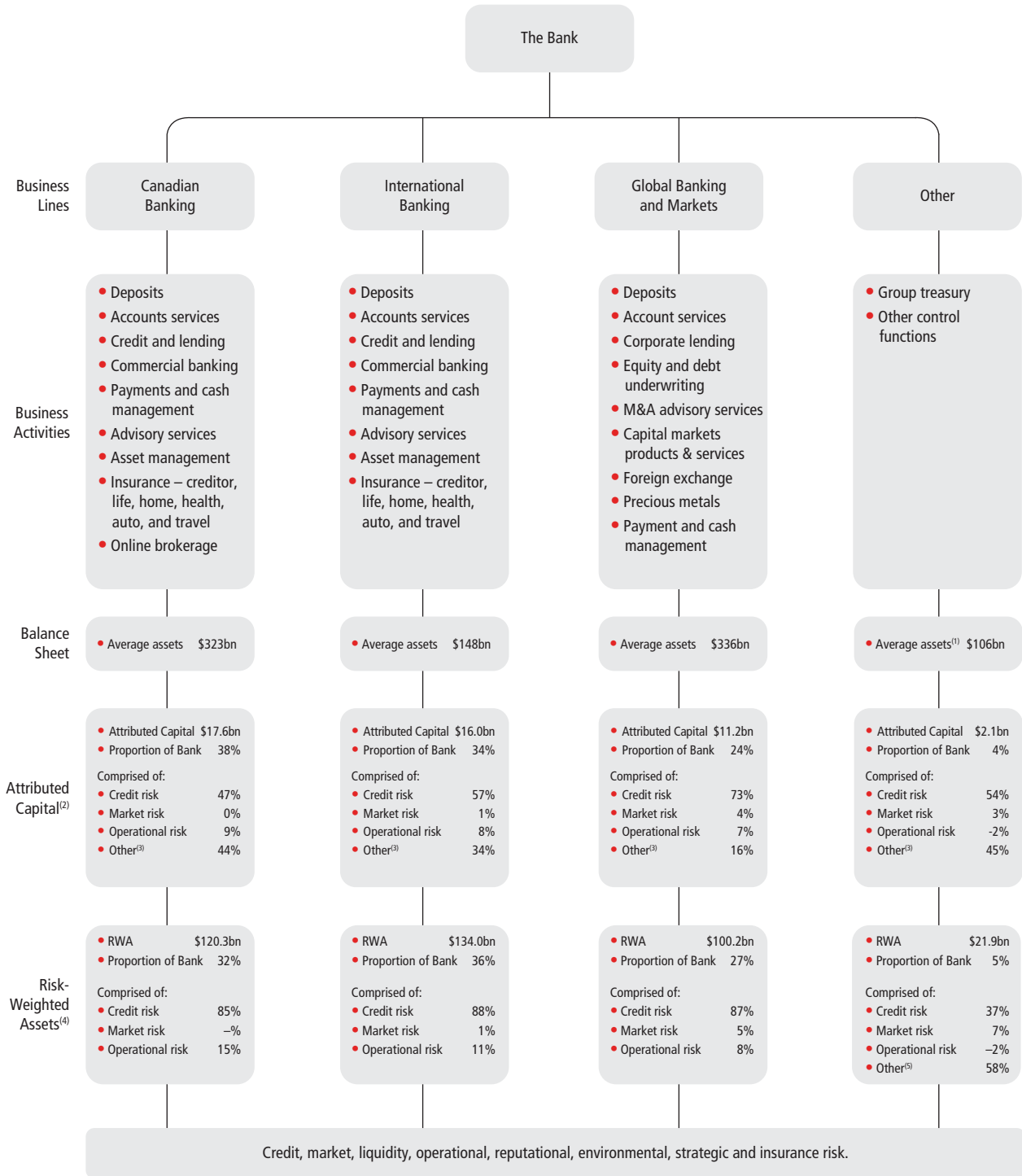
Other elements that influence and support the Bank's risk culture:

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



**Principal Risk Types**

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



(1) Average assets for the Other segment include certain non-earning assets related to the business lines.  
 (2) Attributed Capital is a combination of regulatory: (i) Risk-based capital and (ii) Leverage capital. Attributed Capital is reported on a quarterly average basis.  
 (3) Includes Attributed Capital for significant investments, goodwill, intangibles and Basel I capital floor adjustments.  
 (4) Risk-weighted assets (RWA) are as at October 31, 2017 as measured for regulatory purposes in accordance with the Basel III all-in approach.  
 (5) Includes Basel I capital floor adjustments.

### Top and emerging risks

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

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

#### Geopolitical risk

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

#### Legal and regulatory compliance risk

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

#### Anti-money laundering

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

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

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

#### Technology, information and cyber security risk

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

#### Technology innovation and disruption

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

#### Canadian consumer indebtedness

Canadian household indebtedness has outpaced growth in disposable income in recent quarters fueled by low interest rates and stable national employment levels. In such an environment, an upward trend in mortgage credit growth and strong home sales contributed to higher consumer indebtedness. In light of these trends, multiple levels of government implemented new legislation to introduce additional safeguards to the housing market. These include the foreign buyer tax in British Columbia and Ontario, as well as changes on a national basis to tighten origination criteria for insured mortgages. The Bank actively manages its lending portfolios and stress tests them against various scenarios. For further discussion relating to our retail portfolio, refer to the Credit Risk Summary section.

## Credit Risk

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

### Index of all credit risk disclosures

	Page	Tables and charts	Page
Credit risk summary	68		
Credit Risk Management Framework			
Risk measures	68		
Corporate and commercial	68		
Risk ratings	68		
Adjudication	69		
Credit Risk Mitigation-Collateral/Security	69		
Traditional Non-Retail Products	69		
Commercial/Corporate Real Estate	69		
Traded products	70		
Credit Risk Mitigation-Collateral/Security	70		
Retail	70		
Adjudication	70		
Risk ratings	70		
Credit Risk Mitigation-Collateral/Security	70		
Credit Quality	71	T3 Financial highlights	15
Impaired loans	71	T11 Provision for credit losses as a percentage of average loans and acceptances	22
Allowance for credit losses	71	T12 Net charge-offs as a percentage of average loans and acceptances	22
		T60 Gross impaired loans by geographic segment	107
		T61 Provision against impaired loans by geographic segment	107
		T62 Cross-border exposure to select countries	107
		T63 Loans and acceptances by type of borrower	108
		T64 Off-balance sheet credit instruments	108
		T65 Changes in net impaired loans	109
		T66 Provision for credit losses	109
		T67 Provision for credit losses against impaired loans by type of borrower	110
		T68 Impaired loans by type of borrower	110
		T69 Total credit risk exposures by geography	111
		T70 AIRB credit risk exposures by maturity	111
		T71 Total credit risk exposures and risk-weighted assets	112
		Analysis of the aggregate credit risk exposure including market risk exposure, assets of the Bank's insurance subsidiaries and other assets that fully reconciles to the balance sheet (refer Note 35 – Financial instruments – risk management in the consolidated financial statements)	200
Acquisition-related purchased loans	72		
Portfolio review	72		
Risk diversification	72	C24 Well diversified in Canada and internationally – loans and acceptances	73
		C25 and in household and business lending – loans and acceptances	73
		T59 Loans and acceptances by geography	106
Risk mitigation	72		
Real estate secured lending	73	T43 Bank's exposure distribution by country	74
Loans to Canadian condominium developers	74	Indirect exposures	74
European exposures	74		
Financial instruments	56	T36 Mortgage-backed securities	57
		T37 Collateralized debt obligations (CDOs)	57

### Credit risk summary

- Loans and acceptances (Retail and Non-Retail) remained diversified by region, industry and customer. Regional exposure is spread across our key markets (Canada 67%, United States 7%, Mexico 5% and Other 21%). Financial Services constitutes 4.6% of overall gross exposures (before consideration of collateral) and was \$24 billion, an increase of \$4 billion from October 31, 2016. These exposures are predominately to highly rated counterparties and are generally collateralized.
- The Bank's overall loan book as of October 31, 2017 increased to \$522 billion versus \$497 billion as of October 31, 2016, with growth reflected in Personal, and Business and Government lending. Residential mortgages were \$237 billion as of October 31, 2017, with 87% in Canada. The corporate loan book, which accounts for 35% of the total loan book, is composed of 54% of loans with an investment grade rating as of October 31, 2017, up from 53% as of October 31, 2016.

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

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

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

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

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

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

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

### Risk measures

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

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

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

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

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

### Corporate and commercial

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

#### *Risk ratings*

The Bank's risk rating system utilizes internal grade (IG) ratings – an 18 point scale used to differentiate the risk of default of borrowers, and the risk of loss on facilities. The general relationship between the Bank's internal IG ratings and external agency ratings is shown in T28.

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

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

#### *Adjudication*

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

#### *Commercial/Corporate Real Estate*

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

Appraisals must be in writing and must contain sufficient information and analysis to support the Bank's decision to make the loan. Moreover, in rendering an opinion of the property's market value, third party appraisers are responsible for establishing the scope of work necessary to develop credible assignment results. The appraisal must meet the regulatory and industry requirements which, depending on the type of property being appraised, contain any or all of the following three approaches to value:

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

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

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

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

### Traded products

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

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

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

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

For derivative transactions, investment grade counterparties account for approximately 92% of the credit risk. Approximately 29% of the Bank's derivative counterparty exposures are to bank counterparties. After taking into consideration, where applicable, netting and collateral arrangements, no net credit risk amount arising from traded products transactions with any single counterparty was considered material to the financial position of the Bank as at October 31, 2017. No individual exposure to an investment grade bilateral counterparty exceeded \$1,230 million and no individual exposure to a corporate counterparty exceeded \$752 million.

### Retail

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

#### *Adjudication*

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

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

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

#### *Risk ratings*

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

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

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

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

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



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

### Credit quality

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

As at October 31 (\$ millions)	2017			2016		
	Gross impaired loans	Allowance for credit losses	Net impaired loans	Gross impaired loans	Allowance for credit losses	Net impaired loans
<b>Canadian Banking</b>						
Retail	\$ 882	\$ 645	\$ 237	\$ 1,003	\$ 656	\$ 347
Commercial	174	134	40	228	160	68
	<b>\$ 1,056</b>	<b>\$ 779</b>	<b>\$ 277</b>	<b>\$ 1,231</b>	<b>\$ 816</b>	<b>\$ 415</b>
<b>International Banking</b>						
Caribbean and Central America	\$ 1,221	\$ 461	\$ 760	\$ 1,540	\$ 648	\$ 892
Latin America						
Mexico	303	219	84	301	215	86
Peru	704	402	302	764	501	263
Chile	565	245	320	499	237	262
Colombia	462	261	201	381	239	142
Other Latin America	182	142	40	143	136	7
Total Latin America	<b>2,216</b>	<b>1,269</b>	<b>947</b>	<b>2,088</b>	<b>1,328</b>	<b>760</b>
	<b>\$ 3,437</b>	<b>\$ 1,730</b>	<b>\$ 1,707</b>	<b>\$ 3,628</b>	<b>\$ 1,976</b>	<b>\$ 1,652</b>
<b>Global Banking and Markets</b>						
Canada	\$ 1	\$ 1	\$ –	\$ 27	\$ 7	\$ 20
U.S.	132	39	93	210	47	163
Asia and Europe	239	73	166	298	102	196
	<b>\$ 372</b>	<b>\$ 113</b>	<b>\$ 259</b>	<b>\$ 535</b>	<b>\$ 156</b>	<b>\$ 379</b>
Totals	<b>\$ 4,865</b>	<b>\$ 2,622</b>	<b>\$ 2,243</b>	<b>\$ 5,394</b>	<b>\$ 2,948</b>	<b>\$ 2,446</b>
Allowance for credit losses against performing loans		<b>1,446</b>			<b>1,444</b>	

#### Impaired loan metrics

As at October 31 (\$ millions)	Net impaired loans	
	2017 <sup>(1)</sup>	2016 <sup>(1)</sup>
Net impaired loans as a % of loans and acceptances	<b>0.43%</b>	0.49%
Allowance against impaired loans as a % of gross impaired loans	<b>54%</b>	55%

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

### Impaired loans

Gross impaired loans decreased to \$4,865 million as at October 31, 2017 (excluding \$62 million related to loans purchased under FDIC guarantee related to the acquisition of R-G Premier Bank of Puerto Rico), from \$5,394 million (excluding \$100 million related to R-G Premier Bank of Puerto Rico) last year.

Impaired loans in Canadian Banking decreased by \$175 million, primarily in the retail portfolio.

In International Banking, impaired loans decreased by \$191 million due to decreases in the Caribbean and Central America region, and Peru.

Impaired loans in Global Banking and Markets decreased by \$163 million, due to decreases in Asia, the United States and Canada.

Net impaired loans, after deducting the allowance for credit losses, were \$2,243 million as at October 31, 2017, a decrease of \$203 million from a year ago. Net impaired loans as a percentage of loans and acceptances were 0.43% as at October 31, 2017, a decrease of 6 basis points from 0.49% a year ago.

### Allowance for credit losses

The total allowance for credit losses was down \$324 million to \$4,068 million as at October 31, 2017 (excluding \$259 million related to loans acquired under FDIC guarantee related to the acquisition of R-G Premier Bank of Puerto Rico), from \$4,392 million (excluding \$234 million related to R-G Premier Bank) last year.

Allowances in Canadian Banking decreased by \$37 million to \$779 million, in line with the decreases in gross impaired loans.

In International Banking, allowances decreased by \$246 million to \$1,730 million mainly in the Caribbean and Central America region and Peru.

Global Banking and Markets' allowances decreased by \$43 million to \$113 million, reflecting the decrease in gross impaired loans.

The collective allowance against performing loans is unchanged at \$1,562 million and consists of the collective allowance against performing loans in addition to reserves against unfunded commitments and other off-balance sheet items. The collective allowance against performing loans increased by \$2 million to \$1,446 million due to a re-allocation from the reserves against unfunded commitments and other off-balance sheet items.

### Acquisition-related purchased loans

All purchased loans are initially measured at fair value on the date of acquisition, with no allowance for credit losses recorded in the Consolidated Statement of Financial Position on the date of acquisition. Consequently, none of the purchased loans are considered to be impaired on the date of acquisition. In arriving at the fair value, the Bank considers interest rate mark and credit rate mark adjustments.

The interest rate mark on the date of acquisition is principally set up for fixed interest rate loans and captures the impact of the interest rate differential between the contractual rate of interest on the loan and the prevailing interest rate on the loan on the date of acquisition for the remaining term. The interest rate mark is fully amortized into interest income in the Consolidated Statement of Income over the expected life of the loan using the effective interest method.

The credit mark captures management's best estimate of cash flow shortfalls on the loans over their lifetime as determined at the date of acquisition. Changes to the expected cash flows of these loans are recorded as a charge/recovery in the provision for credit losses in the Consolidated Statement of Income.

The total credit mark remaining on all acquired loans in Canadian Banking and International Banking as at October 31, 2017 was \$58 million (October 31, 2016 – \$259 million).

Adjusting for the impact of foreign currency translation, the utilization of incurred and expected losses in the credit mark during the year was \$192 million (for the year ended October 31, 2016 – \$244 million). The net benefit to net income attributable to common shareholders from the credit mark on acquired loans this year was \$113 million (for the year ended October 31, 2016 – \$123 million).

### Portfolio review

#### Canadian Banking

Gross impaired loans in the retail portfolio decreased by \$121 million or 12%. Provision for credit losses in the retail portfolio was \$857 million, up \$87 million or 11% from last year driven by growth in relatively higher spread loans.

In the commercial loan portfolio, gross impaired loans decreased by \$54 million to \$174 million. The provision for credit losses was \$56 million, down \$6 million or 10% from last year.

#### International Banking

In retail, gross impaired loans decreased by \$54 million to \$2,173 million, with a decrease attributable mainly to the Caribbean and Central America region. The provision for credit losses in the retail portfolio increased to \$1,090 million from \$1,007 million last year. Retail provision increases in Colombia, Chile, Uruguay and Peru were partly offset by decreases in Mexico and the Caribbean and Central America region. In commercial banking, gross impaired loans were \$1,264 million, a decrease of \$137 million over the prior year. The provision for credit losses in the commercial portfolio was \$204 million compared with \$274 million last year. The decrease was primarily attributable to lower provisions in Colombia, the Caribbean and Mexico, partially offset by higher provisions primarily in Chile and Central America.

#### Global Banking and Markets

Gross impaired loans in Global Banking and Markets decreased by \$163 million to \$372 million, primarily in Asia. The provision for credit losses was \$42 million compared with \$249 million last year. The provisions this year were primarily in Asia and Europe.

#### Risk diversification

The Bank's exposures to various countries and types of borrowers are well diversified (see T59 and T63). Chart C24 shows loans and acceptances by geography. Ontario represents the largest Canadian exposure at 33% of the total. Latin America was 11% of the total exposure and the U.S. was 7%.

C25 shows loans and acceptances by type of borrower (see T63). Excluding loans to households, the largest industry exposures were real estate and construction (4.7%), financial services (4.6% including banks and non-banks), wholesale and retail (4.0%) and energy (3.0%).

#### Risk mitigation

To mitigate exposures in its performing corporate portfolios, the Bank uses diversification by company, industry, and country, with loan sales and credit derivatives used sparingly. In 2017, loan sales totaled \$242.1 million, compared to \$42 million in 2016. The largest volume of loan sales in 2017 related to loans in the energy industry. As at October 31, 2017, credit derivatives used to mitigate exposures in the portfolios totaled \$23 million (notional amount), compared to \$24 million as at October 31, 2016.

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

### Overview of loan portfolio

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

#### Energy

The Bank's outstanding loan exposure to commercial and corporate companies in the energy sector was \$15.5 billion as at October 31, 2017 (October 31, 2016 – \$15.6 billion), reflecting approximately 3.0% (October 31, 2016 – 3.1%) of the Bank's total loan portfolio. In addition, the Bank has related undrawn energy loan commitments amounting to \$13.1 billion as at October 31, 2017 (October 31, 2016 – \$11.1 billion). The increase in undrawn loan commitments is primarily driven by the upstream and midstream sub-sectors. Exposure in the upstream sub-sector increase by \$1.9 billion since October 31, 2016. Approximately 64% of the Bank's outstanding energy loan exposure and associated undrawn commitments are investment grade, after taking into account the benefit of collateral and guarantees.

The Bank continues to consider the impact of lower energy prices in its ongoing stress testing program. Results continue to be within our risk tolerance.

### Real estate secured lending

A large portion of the Bank's lending portfolio is comprised of residential mortgages and consumer loans, which are well diversified by borrower. As at October 31, 2017, these loans accounted for \$340 billion or 65% of the Bank's total loans and acceptances outstanding (October 31, 2016 – \$322 billion or 65%). Of these, \$257 billion or 76% are real estate secured loans (October 31, 2016 – \$242 billion or 75%). The tables below provide more details by portfolios.

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

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

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

As at October 31 (\$ millions)	2017											
	Residential mortgages						Home equity lines of credit					
	Insured <sup>(1)</sup>		Uninsured		Total		Insured <sup>(1)</sup>		Uninsured		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Canada <sup>(2)</sup>												
Atlantic provinces	\$ 6,671	3.2	\$ 5,088	2.5	\$ 11,759	5.7	\$ 1	–	\$ 1,226	6.1	\$ 1,227	6.1
Quebec	8,100	3.9	7,843	3.8	15,943	7.7	–	–	1,009	5.0	1,009	5.0
Ontario	46,367	22.5	55,166	26.8	101,533	49.3	–	–	10,416	51.7	10,416	51.7
Manitoba & Saskatchewan	5,696	2.8	3,698	1.8	9,394	4.6	1	–	816	4.1	817	4.1
Alberta	18,902	9.2	12,162	5.9	31,064	15.1	2	–	3,050	15.1	3,052	15.1
British Columbia & Territories	15,185	7.4	20,915	10.2	36,100	17.6	–	–	3,631	18.0	3,631	18.0
Canada <sup>(3)</sup>	\$100,921	49.0%	\$104,872	51.0%	\$205,793	100%	\$ 4	–%	\$20,148	100%	\$20,152	100%
International	–	–	31,123	100	31,123	–	–	–	–	–	–	–
Total	\$100,921	42.6%	\$135,995	57.4%	\$236,916	100%	\$ 4	–%	\$20,148	100%	\$20,152	100%
	2016											
Canada <sup>(3)</sup>	\$109,947	56.9%	\$ 83,356	43.1%	\$193,303	100%	\$ 8	0.1%	\$19,065	99.9%	\$19,073	100%
International	–	–	29,585	100	29,585	100	–	–	–	–	–	–
Total	\$109,947	49.3%	\$112,941	50.7%	\$222,888	100%	\$ 8	0.1%	\$19,065	99.9%	\$19,073	100%

- (1) Default insurance is contractual coverage for the life of eligible facilities whereby the Bank's exposure to real estate secured lending is protected against potential shortfalls caused by borrower default. This insurance is provided by either government-backed entities or private mortgage insurers.
- (2) The province represents the location of the property in Canada.
- (3) Includes multi-residential dwellings (4+ units) of \$2,594 (October 31, 2016 – \$2,376) of which \$1,689 are insured (October 31, 2016 – \$1,392).

#### Amortization period ranges for residential mortgages

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

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

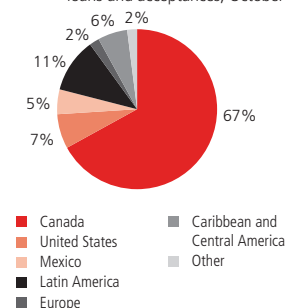
As at October 31	2017						
	Residential mortgages by remaining amortization periods						
	Less than 20 years	20-24 years	25-29 years	30-34 years	35 years and greater	Total residential mortgage	
Canada	33.8%	37.9%	26.9%	1.3%	0.1%	100%	
International	69.3%	17.2%	11.1%	2.3%	0.1%	100%	
	2016						
Canada	35.2%	36.3%	26.7%	1.7%	0.1%	100%	
International	67.7%	19.0%	11.5%	1.7%	0.1%	100%	

#### Loan to value ratios

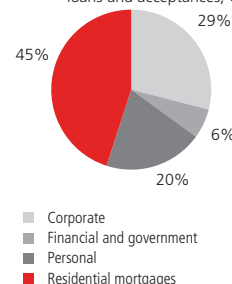
The Canadian residential mortgage portfolio is 51% uninsured (October 31, 2016 – 43%). The average loan-to-value (LTV) ratio of the uninsured portfolio is 51% (October 31, 2016 – 50%).

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

**C24** Well diversified in Canada and internationally... loans and acceptances, October 2017



**C25** ... and in household and business lending loans and acceptances, October 2017



**T42** Loan to value ratios

	Uninsured LTV ratios <sup>(1)</sup>	
	For the year end October 31, 2017	
	Residential mortgages LTV%	Home equity lines of credit <sup>(2)</sup> LTV%
Canada:		
Atlantic provinces	69.4%	57.8%
Quebec	65.4	67.9
Ontario	63.2	62.0
Manitoba & Saskatchewan	68.7	62.8
Alberta	68.3	70.0
British Columbia & Territories	62.7	61.3
Canada	64.0%	62.7%
International	70.4%	n/a
	For the year end October 31, 2016	
Canada	62.9%	64.5%
International	69.1%	n/a

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

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

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

The Bank performs stress testing on its portfolio to assess the impact of increased levels of unemployment, rising interest rates, reduction in property values and changes in other relevant macro-economic variables. Potential losses in the mortgage portfolio under such economic downturn scenarios are considered manageable given the diversified composition of the portfolio, the high percentage of insured exposures, and the low LTV in the portfolio. This is further supported by sound risk management oversight and pro-active risk mitigation strategies.

**Loans to Canadian condominium developers**

With respect to loans to Canadian condominium developers, the Bank had loans outstanding of \$949 million as at October 31, 2017 (October 31, 2016 – \$956 million). This is a high quality portfolio with well-known developers who have long-term relationships with the Bank.

**European exposures**

The Bank believes that its European exposures are manageable, are sized appropriately relative to the credit worthiness of the counterparties (86% of the exposures are to investment grade counterparties based on a combination of internal and external ratings), and are modest relative to the capital levels of the Bank. There were no significant events in the quarter that have materially impacted the Bank's exposures.

The Bank's exposure to sovereigns was \$8.9 billion as at October 31, 2017 (October 31, 2016 – \$7.3 billion), \$5.7 billion to banks (October 31, 2016 – \$5.2 billion) and \$17.6 billion to corporates (October 31, 2016 – \$16.6 billion).

In addition to exposures detailed in the table below, the Bank had indirect exposures consisting of securities exposures to non-European entities whose parent company is domiciled in Europe of \$1.3 billion as at October 31, 2017 (October 31, 2016 – \$0.6 billion).

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

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

As at October 31	2017							2016
	Loans and loan equivalents <sup>(1)</sup>	Deposits with financial institutions	Securities <sup>(2)</sup>	SFT and derivatives <sup>(3)</sup>	Funded Total	Undrawn Commitments <sup>(4)</sup>	Total	Total
(\$ millions)								
Greece	\$ 214	\$ –	\$ (1)	\$ –	\$ 213	\$ –	\$ 213	\$ 311
Ireland	582	275	10	43	910	1,123	2,033	771
Italy	93	–	(9)	–	84	49	133	240
Portugal	–	–	–	1	1	–	1	–
Spain	637	1	(2)	5	641	185	826	771
Total GIIPS	\$ 1,526	\$ 276	\$ (2)	\$ 49	\$ 1,849	\$ 1,357	\$ 3,206	\$ 2,093
U.K.	\$ 8,956	\$ 1,510	\$ 2,343	\$ 1,804	\$ 14,613	\$ 5,553	\$ 20,166	\$ 15,986
Germany	1,131	731	1,571	59	3,492	1,003	4,495	4,878
France	1,036	52	2,317	87	3,492	1,561	5,053	5,325
Netherlands	1,476	121	318	91	2,006	1,335	3,341	3,469
Switzerland	783	7	154	269	1,213	943	2,156	2,300
Other	2,744	144	2,304	359	5,551	2,517	8,068	7,546
Total Non-GIIPS	\$ 16,126	\$ 2,565	\$ 9,007	\$ 2,669	\$ 30,367	\$ 12,912	\$ 43,279	\$ 39,504
Total Europe	\$ 17,652	\$ 2,841	\$ 9,005	\$ 2,718	\$ 32,216	\$ 14,269	\$ 46,485	\$ 41,597
As at October 31, 2016	\$ 14,748	\$ 2,519	\$ 8,304	\$ 3,554	\$ 29,125	\$ 12,472	\$ 41,597	

(1) Individual allowances for credit losses are \$52. Letters of credit and guarantees are included as funded exposure as they have been issued. Included in loans and loans equivalent are letters of credit and guarantees which total \$3,366 as at October 31, 2017 (October 31, 2016 – \$2,890).

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

(3) SFT comprise of securities purchased under resale agreements, obligations related to securities sold under repurchase agreements and securities lending and borrowing transactions. Gross and net funded exposures represent all net positive positions after taking into account collateral. Collateral held against derivatives was \$2,515 and collateral held against SFT was \$12,112.

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

## Market Risk

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

Index of all market risk disclosures			
Index	Page	Tables and charts	Page
Market risk factors	76		
Interest rate risk	76		
Credit spread risk	76		
Foreign currency risk	76		
Equity risk	76		
Commodity risk	76		
Market risk governance	76		
Risk measurement summary	76		
Value at risk	76		
Incremental risk charge and comprehensive risk measure	77		
Stress testing	77		
Sensitivity analysis	77		
Gap analysis	77		
Validation of market risk models	77		
Non-trading market risk	77		
Interest rate risk	77-78	C26 Interest rate gap	78
		T44 Interest rate gap	78
		T45 Structural interest rate sensitivity	78
Foreign currency risk	78-79		
Investment portfolio risks	79		
Trading market risk	79	T46 Market risk measures	79
		C27 Trading revenue distribution	80
		C28 Daily trading revenue vs. VaR	80
Market risk linkage to balance sheet	81	T47 Market risk linkage to balance sheet of the Bank	81
Derivative instruments and structured transactions	81		
Derivatives	81		
Structured transactions	81-82		
European exposures	74	T43 Bank's exposure distribution by country	74
Market risk	52-53	T33 Total market risk capital	53
Financial instruments	56	T36 Mortgage-backed securities	57
		T37 Collateralized debt obligations (CDOs)	57

**Market risk factors**

**Interest rate risk**

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

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

**Credit spread risk**

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

**Foreign currency risk**

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

**Equity risk**

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

**Commodity risk**

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

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

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

**Market risk governance**

**Overview**

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

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

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

**Risk measurement summary**

*Value at risk (VaR)*

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

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

### *Incremental Risk Charge (IRC) and Comprehensive Risk Measure (CRM)*

Basel market risk capital requirements include IRC and CRM which capture the following:

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

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

A Monte Carlo model is used to perform default and migration simulations for the obligors underlying credit derivative and bond portfolios. In addition, in correlation trading there is a market simulation model in CRM to capture historical price movements. Both IRC and CRM are calculated at the 99.9th percentile with a one year liquidity horizon. The Board reviews IRC and CRM results quarterly.

### *Stress testing*

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

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

### *Sensitivity analysis*

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

In non-trading portfolios, sensitivity analysis assesses the effect of changes in interest rates on current earnings and on the economic value of shareholders' equity. It is applied globally to each of the major currencies within the Bank's operations. The Bank's sensitivity analysis for limit and disclosure purposes is measured through positive and negative parallel shifts in the underlying interest rate curves. The Bank also performs sensitivity analysis using various non-parallel interest rate curve shifts, for example: curve steepeners, curve flatteners and curve twists.

### *Gap analysis*

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

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

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

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

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

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

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

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

#### *Interest rate risk*

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

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

Net interest income and the economic value of equity result from the differences between yields earned on the Bank's non-trading assets and interest rate paid on its liabilities. The difference in yields partly reflects mismatch between the maturity and re-pricing characteristics of the assets and liabilities. This mismatch is inherent in the non-trading operations of the Bank and exposes it to adverse changes in the level of interest rates. The

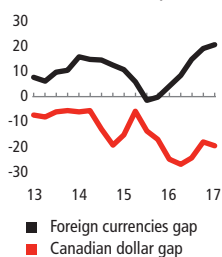
Asset-Liability Committee provides strategic direction for the management of structural interest rate risk within the risk appetite framework authorized by the Board of Directors. The asset/liability management strategy is executed by Group Treasury with the objective of enhancing net interest income within established risk tolerances.

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

T45 shows the after-tax impact of an immediate and sustained 100 basis point shock over a one year period on annual income and economic value of shareholders' equity. The interest rate sensitivities tabulated are based on a static balance sheet. There are no assumptions made for management actions that may mitigate risk. Based on the Bank's interest rate positions at year-end 2017, an immediate and sustained 100 basis point decrease in interest rates across all currencies and maturities would decrease after-tax net income by approximately \$67 million over the next 12 months. This interest rate profile is different between Canadian dollar denominated and foreign currencies denominated, with Canadian dollar exposures benefitting from an interest rate decrease in the next year, assuming no further management action. During fiscal 2017, this measure ranged between \$(85) million and \$131 million.

This same increase in interest rates would result in an after-tax decrease in the present value of the Bank's net assets of approximately \$354 million. During fiscal 2017, this measure ranged between \$(847) million and \$(268) million. The directional sensitivity of these two key metrics is largely determined by the difference in time horizons (annual income captures the impact over the next twelve months only, whereas economic value considers the potential impact of interest rate changes on the present value of all future cash flows). The annual income and economic value results are compared to the authorized Board limits. There were no limit breaches in the reporting period.

**C26** Interest rate gap  
\$ billions, one-year interest rate gap



**T44** Interest rate gap

Interest rate sensitivity position <sup>(1)</sup> As at October 31, 2017 (\$ billions)	Within 3 months	3 to 12 months	Over 1 year	Non-interest rate sensitive	Total
<b>Canadian dollars</b>					
Assets	\$ 206.2	\$ 52.2	\$ 156.4	\$ 1.5	<b>\$ 416.3</b>
Liabilities	\$ 229.1	\$ 49.0	\$ 127.2	\$ 11.0	<b>\$ 416.3</b>
Gap	\$ (22.9)	\$ 3.2	\$ 29.2	\$ (9.5)	<b>\$ -</b>
<b>Foreign currencies</b>					
Assets	\$ 320.4	\$ 34.9	\$ 64.0	\$ 79.7	<b>\$ 499.0</b>
Liabilities	\$ 298.4	\$ 36.2	\$ 64.4	\$ 100.0	<b>\$ 499.0</b>
Gap	\$ 22.0	\$ (1.3)	\$ (0.4)	\$ (20.3)	<b>\$ -</b>
<b>Total</b>					
Gap	\$ (0.9)	\$ 1.9	\$ 28.8	\$ (29.8)	<b>\$ -</b>
As at October 31, 2016					
Gap	\$ (7.9)	\$ (13.0)	\$ 58.1	\$ (37.2)	<b>\$ -</b>

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

**T45** Structural interest sensitivity

As at October 31 (\$ millions)	2017		2016	
	Economic Value of Shareholders' Equity	Annual Income	Economic Value of Shareholders' Equity	Annual Income
After-tax impact of				
100bp increase in rates				
Non-trading risk	\$ (354)	\$ 64	\$ (785)	\$ (32)
100bp decrease in rates				
Non-trading risk	\$ 183	\$ (67)	\$ 650	\$ 32

*Foreign currency risk*

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



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

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

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

As at October 31, 2017, 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 \$58 million (October 31, 2016 – \$60 million) in the absence of hedging activity, primarily from the exposure to U.S. dollars.

#### Investment portfolio risks

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

#### Trading market risk

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

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

In fiscal 2017, the total one-day VaR for trading activities averaged \$11.2 million, compared to \$12.6 million in 2016.

#### T46 Market risk measures

(\$ millions)	2017				2016			
	Year end	Avg	High	Low	Year end	Avg	High	Low
Credit Spread plus Interest Rate	\$ 10.1	\$ 10.8	\$ 15.1	\$ 8.0	\$ 10.6	\$ 10.6	\$ 16.4	\$ 7.5
Credit Spread	6.9	6.3	9.1	4.1	8.0	8.3	13.6	4.5
Interest Rate	8.4	8.4	12.0	5.3	8.5	6.4	10.0	3.0
Equities	3.2	2.2	4.8	1.0	2.0	2.7	6.4	0.8
Foreign Exchange	2.9	2.2	5.5	0.7	2.1	1.3	2.9	0.6
Commodities	1.3	1.4	2.6	0.6	2.0	2.4	3.9	1.3
Debt Specific	3.3	3.6	5.1	2.4	4.2	6.3	12.6	3.7
Diversification Effect	(10.3)	(8.9)	n/a	n/a	(7.6)	(10.7)	n/a	n/a
All-Bank VaR	\$ 10.6	\$ 11.2	\$ 14.9	\$ 9.1	\$ 13.2	\$ 12.6	\$ 20.3	\$ 8.7
All-Bank Stressed VaR	\$ 34.7	\$ 28.5	\$ 44.5	\$ 19.2	\$ 21.2	\$ 27.6	\$ 37.4	\$ 18.0
Incremental Risk Charge	\$ 144.5	\$ 271.2	\$ 399.8	\$ 144.5	\$ 391.7	\$ 423.4	\$ 539.5	\$ 277.6
Comprehensive Risk Measure	\$ –	\$ 49.2	\$ 65.2	\$ –	\$ 70.2	\$ 107.6	\$ 227.3	\$ 62.8

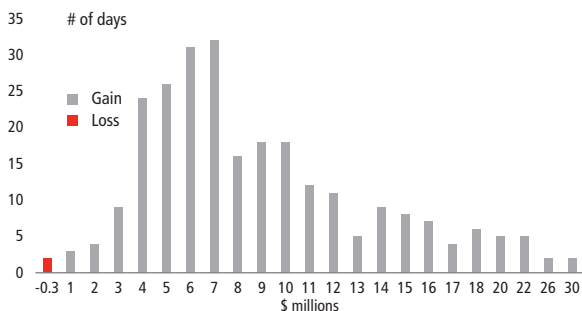
The Bank also calculates a Stressed VaR which uses the same basic methodology as the VaR. However, Stressed VaR is calculated using market volatility from a one-year time period identified as stressful, given the risk profile of the trading portfolio. The current period is the 2008/2009 credit crisis surrounding the collapse of Lehman Brothers. In fiscal 2017, the total one-day Stressed VaR for trading activities averaged \$28.5 million compared to \$27.6 million in 2016.

In fiscal 2017, the average IRC decreased to \$271.2 million from \$423.4 million in 2016, primarily driven by reduced emerging market exposure. The CRM reduced to zero in Q3, following the maturity of the legacy correlation trading portfolio.

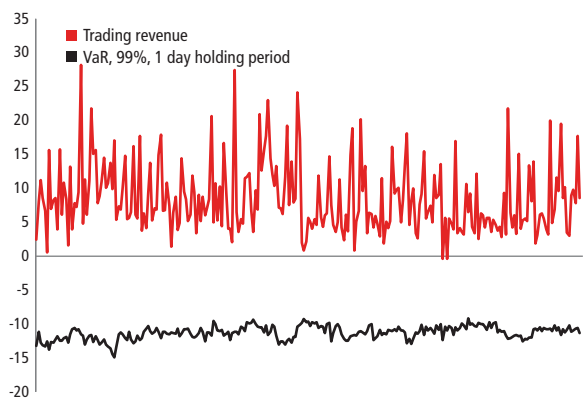
Description of trading revenue components and graphical comparison of VaR to daily P&L

Chart C27 shows the distribution of daily trading revenue for fiscal 2017 and Chart C28 compares that distribution to daily VaR results. Trading revenue includes changes in portfolio value as well as the impact of new trades, commissions, fees and reserves. Some components of revenue which are calculated less frequently are pro-rated. Trading revenue averaged \$7.0 million per day, compared to \$6.5 million in 2016. Revenue was positive on 99% of trading days during the year, an increase from 98% in 2016. During the year, the largest single day trading loss was \$0.4 million which occurred on August 3, 2017, and was smaller than the total VaR of \$11.0 million on the same day.

**C27** Trading revenue distribution  
Year ended October 31, 2017



**C28** Daily trading revenue vs. VaR  
\$ millions, November 1, 2016 to October 31, 2017



## Market risk linkage to Consolidated Statement of Financial Position

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

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

#### Market Risk Measure

As at October 31, 2017 (\$ millions)	Consolidated Statement of Financial Position	Trading Risk	Non-trading risk	Not subject to market risk	Primary risk sensitivity of non-trading risk
Precious metals	\$ 5,717	\$ 5,717	\$ –	\$ –	n/a
Trading assets	98,464	98,464	–	–	n/a
Financial instruments designated at fair value through profit or loss	13	–	13	–	Interest rate
Derivative financial instruments	35,364	30,648	4,716	–	Interest rate, FX, equity
Investment securities	69,269	–	69,269	–	Interest rate, FX, equity
Loans	504,369	–	504,369	–	Interest rate, FX
Assets not subject to market risk <sup>(1)</sup>	202,077	–	–	202,077	n/a
<b>Total assets</b>	<b>\$ 915,273</b>	<b>\$ 134,829</b>	<b>\$ 578,367</b>	<b>\$ 202,077</b>	
Deposits	\$ 625,367	\$ –	\$ 593,174	\$ 32,193	Interest rate, FX, equity
Financial instruments designated at fair value through profit or loss	4,663	–	4,663	–	Interest rate, equity
Obligations related to securities sold short	30,766	30,766	–	–	n/a
Derivative financial instruments	34,200	30,545	3,655	–	Interest rate, FX, equity
Trading liabilities <sup>(2)</sup>	6,819	6,819	–	–	n/a
Retirement and other benefit liabilities	2,201	–	2,201	–	Interest rate, credit spread, equity
Liabilities not subject to market risk <sup>(3)</sup>	149,632	–	–	149,632	n/a
<b>Total liabilities</b>	<b>\$ 853,648</b>	<b>\$ 68,130</b>	<b>\$ 603,693</b>	<b>\$ 181,825</b>	

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

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

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

#### Market Risk Measure

As at October 31, 2016 (\$ millions)	Consolidated Statement of Financial Position	Trading Risk	Non-trading risk	Not subject to market risk	Primary risk sensitivity of non-trading risk
Precious metals	\$ 8,442	\$ 8,442	\$ –	\$ –	n/a
Trading assets	108,561	108,561	–	–	n/a
Financial instruments designated at fair value through profit or loss	221	–	221	–	Interest rate
Derivative financial instruments	41,657	36,401	5,256	–	Interest rate, FX, equity
Investment securities	72,919	–	72,919	–	Interest rate, FX, equity
Loans	480,164	–	480,164	–	Interest rate, FX
Assets not subject to market risk <sup>(1)</sup>	184,302	–	–	184,302	n/a
<b>Total assets</b>	<b>\$ 896,266</b>	<b>\$ 153,404</b>	<b>\$ 558,560</b>	<b>\$ 184,302</b>	
Deposits	\$ 611,877	\$ –	\$ 580,814	\$ 31,063	Interest rate, FX, equity
Financial instruments designated at fair value through profit or loss	1,459	–	1,459	–	Interest rate, equity
Obligations related to securities sold short	23,312	23,312	–	–	n/a
Derivative financial instruments	42,387	38,213	4,174	–	Interest rate, FX, equity
Trading liabilities <sup>(2)</sup>	8,430	8,430	–	–	n/a
Retirement and other benefit liabilities	3,011	–	3,011	–	Interest rate, credit spread, equity
Liabilities not subject to market risk <sup>(3)</sup>	147,969	–	–	147,969	n/a
<b>Total liabilities</b>	<b>\$ 838,445</b>	<b>\$ 69,955</b>	<b>\$ 589,458</b>	<b>\$ 179,032</b>	

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

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

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

## Derivative instruments and structured transactions

### Derivatives

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

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

### Structured transactions

Structured transactions are specialized transactions that may involve combinations of cash, other financial assets and derivatives designed to meet the specific risk management or financial requirements of customers. These transactions are carefully evaluated by the Bank to identify and address the

credit, market, legal, tax, reputational and other risks, and are subject to a cross-functional review and sign-off by Trading Management, Global Risk Management, Taxation, Finance and Legal departments. Large structured transactions are also subject to review by senior risk management committees and evaluated in accordance with the procedures described below in Reputational Risk.

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

## Liquidity Risk

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

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

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

The key elements of the liquidity risk framework are:

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

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

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

## Liquid assets

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

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

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

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

The Bank maintains large holdings of unencumbered liquid assets to support its operations. These assets generally can be sold or pledged to meet the Bank's obligations. As at October 31, 2017, unencumbered liquid assets were \$180 billion (October 31, 2016 – \$183 billion). Securities including NHA mortgage-backed securities, comprised 67% of liquid assets (October 31, 2016 – 74%). Other unencumbered liquid assets, comprising cash and deposits with central banks, deposits with financial institutions, precious metals and call and short loans, were 33% (October 31, 2016 – 26%). The decrease in liquid assets was mainly attributable to a decrease in unencumbered liquid securities, precious metals and deposits with financial institutions, which was partially offset by an increase in deposits with central banks.

The carrying values outlined in the liquid asset table are consistent with the carrying values in the Bank's Statement of Financial Position as at October 31, 2017. The liquidity value of the portfolio will vary under different stress events as different assumptions are used for the stress scenarios.

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

**T48** Liquid asset pool

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

As at October 31, 2016 (\$ millions)	Bank-owned liquid assets	Securities received as collateral from securities financing and derivative transactions	Total liquid assets	Encumbered liquid assets		Unencumbered liquid assets	
				Pledged as collateral	Other <sup>(1)</sup>	Available as collateral	Other
Cash and deposits with central banks	\$ 35,396	\$ –	\$ 35,396	\$ –	\$ 7,917	\$ 27,479	\$ –
Deposits with financial institutions	10,948	–	10,948	–	196	10,752	–
Precious metals	8,442	–	8,442	–	115	8,327	–
Securities							
Canadian government obligations	45,825	12,482	58,307	27,187	–	31,120	–
Foreign government obligations	50,761	36,822	87,583	58,680	–	28,903	–
Other securities	58,833	60,745	119,578	76,394	–	43,184	–
Loans							
NHA mortgage-backed securities <sup>(2)</sup>	33,072	–	33,072	1,993	–	31,079	–
Call and short loans	1,673	–	1,673	–	–	1,673	–
<b>Total</b>	<b>\$ 244,950</b>	<b>\$ 110,049</b>	<b>\$ 354,999</b>	<b>\$ 164,254</b>	<b>\$ 8,228</b>	<b>\$ 182,517</b>	<b>\$ –</b>

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

(2) These mortgage-backed securities, which are available for sale, are reported as residential mortgage loans on the balance sheet.

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

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

As at October 31 (\$ millions)	2017	2016
Bank of Nova Scotia (Parent)	\$ 131,838	\$ 135,335
Bank domestic subsidiaries	13,753	13,871
Bank foreign subsidiaries	34,729	33,311
<b>Total</b>	<b>\$ 180,320</b>	<b>\$ 182,517</b>

The Bank's liquidity pool is held across major currencies, mostly comprised of Canadian and U.S. dollar holdings. As shown above, the vast majority (81%) of liquid assets are held by the Bank's corporate office, branches of the Bank, and Canadian subsidiaries of the Bank. To the extent a liquidity reserve held in a foreign subsidiary of the Bank is required for regulatory purposes, it is assumed to be unavailable to the rest of the Group. Other liquid assets held by a foreign subsidiary are assumed to be available only in limited circumstances. The Bank monitors and ensures compliance in relation to minimum levels of liquidity required and assets held within each entity, and/or jurisdiction.

### Encumbered assets

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

#### T50 Asset encumbrance

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

As at October 31, 2016 (\$ millions)	Bank-owned assets	Securities received as collateral from securities financing and derivative transactions	Total assets	Encumbered assets		Unencumbered assets	
				Pledged as collateral	Other <sup>(1)</sup>	Available as collateral <sup>(2)</sup>	Other <sup>(3)</sup>
Cash and deposits with central banks	\$ 35,396	\$ –	\$ 35,396	\$ –	\$ 7,917	\$ 27,479	\$ –
Deposits with financial institutions	10,948	–	10,948	–	196	10,752	–
Precious metals	8,442	–	8,442	–	115	8,327	–
Liquid securities:							
Canadian government obligations	45,825	12,482	58,307	27,187	–	31,120	–
Foreign government obligations	50,761	36,822	87,583	58,680	–	28,903	–
Other liquid securities	58,833	60,745	119,578	76,394	–	43,184	–
Other securities	5,007	4,149	9,156	3,615	–	–	5,541
Loans classified as liquid assets:							
NHA mortgage-backed securities	33,072	–	33,072	1,993	–	31,079	–
Call and short loans	1,673	–	1,673	–	–	1,673	–
Other loans	464,840	–	464,840	5,934	60,311	11,596	386,999
Other financial assets <sup>(4)</sup>	151,916	(84,399)	67,517	5,316	–	–	62,201
Non-financial assets	29,553	–	29,553	–	–	–	29,553
<b>Total</b>	<b>\$ 896,266</b>	<b>\$ 29,799</b>	<b>\$ 926,065</b>	<b>\$ 179,119</b>	<b>\$ 68,539</b>	<b>\$ 194,113</b>	<b>\$ 484,294</b>

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

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

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

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

As of October 31, 2017, total encumbered assets of the Bank were \$257 billion (October 31, 2016 – \$248 billion). Of the remaining \$701 billion (October 31, 2016 – \$678 billion) of unencumbered assets, \$193 billion (October 31, 2016 – \$194 billion) are considered readily available in the normal course of business to secure funding or meet collateral needs as detailed above.

In some over-the-counter derivative contracts, the Bank would be required to post additional collateral or receive less collateral in the event its credit rating was downgraded. The Bank maintains access to sufficient collateral to meet these obligations in the event of a downgrade of its ratings by one or more of the rating agencies. In the event of a one-notch or two-notch downgrade of the Bank's rating below its lowest current rating, the Bank has to provide an additional \$53 million or \$161 million of collateral, respectively, to meet contractual derivative funding or margin requirements.

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

### Liquidity coverage ratio

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

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

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

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

The following table presents the Bank's average LCR for the quarter ended October 31, 2017, based on the average daily position in the quarter (October 31, 2016 – based on month-end LCR calculations for August, September and October).

**T51** Bank's average LCR

For the quarter ended October 31, 2017 (\$ millions) <sup>(1)</sup>	Total unweighted value (Average) <sup>(2)</sup>	Total weighted value (Average) <sup>(3)</sup>
<b>High-quality liquid assets</b>		
Total high-quality liquid assets (HQLA)	*	\$ 127,444
<b>Cash outflows</b>		
Retail deposits and deposits from small business customers, of which:	\$ 167,418	11,390
Stable deposits	78,922	2,540
Less stable deposits	88,496	8,850
Unsecured wholesale funding, of which:	161,682	78,135
Operational deposits (all counterparties) and deposits in networks of cooperative banks	54,947	13,338
Non-operational deposits (all counterparties)	86,727	44,789
Unsecured debt	20,008	20,008
Secured wholesale funding	*	30,152
Additional requirements, of which:	182,203	38,530
Outflows related to derivative exposures and other collateral requirements	24,467	14,611
Outflows related to loss of funding on debt products	5,058	5,058
Credit and liquidity facilities	152,678	18,861
Other contractual funding obligations	2,779	1,181
Other contingent funding obligations <sup>(4)</sup>	436,988	7,055
<b>Total cash outflows</b>	*	\$ 166,443
<b>Cash inflows</b>		
Secured lending (e.g. reverse repos)	\$ 142,364	\$ 25,351
Inflows from fully performing exposures	20,335	13,125
Other cash inflows	26,216	26,216
<b>Total cash inflows</b>	\$ 188,915	\$ 64,692
		Total adjusted value <sup>(5)</sup>
<b>Total HQLA</b>	*	\$ 127,444
<b>Total net cash outflows</b>	*	\$ 101,751
<b>Liquidity coverage ratio (%)</b>	*	125%

For the quarter ended October 31, 2016 (\$ millions)		Total adjusted value <sup>(5)</sup>
Total HQLA	*	\$ 136,401
Total net cash outflows	*	\$ 107,822
Liquidity coverage ratio (%)	*	127%

\* Disclosure is not required under regulatory guideline.

(1) Based on the average daily positions of the 63 business days in the quarter.

(2) Unweighted values represent outstanding balances maturing or callable within the next 30 days.

(3) Weighted values represent balances calculated after the application of HQLA haircuts or inflow and outflow rates, as prescribed by the OSFI LAR guidelines.

(4) Total unweighted value includes uncommitted credit and liquidity facilities, guarantees and letters of credit, outstanding debt securities with remaining maturity greater than 30 days, and other contractual cash outflows.

(5) Total adjusted value represents balances calculated after the application of both haircuts and inflow and outflow rates and any applicable caps.

HQLA continues to be substantially comprised of Level 1 assets (as defined in the LAR guideline). The Bank's average LCR for the quarter ended October 31, 2017 was in line with the quarter ended October 31, 2016.

The Bank's significant operating currencies are Canadian and U.S. dollars. The Bank monitors its significant currency exposures in accordance with its liquidity risk management framework and risk appetite.

## Funding

The Bank ensures that its funding sources are well diversified. Funding concentrations are regularly monitored and analyzed by type. The sources of funding are capital, deposits from retail and commercial clients sourced through the Canadian and international branch network, deposits from financial institutions as well as wholesale debt issuance.

Capital and personal deposits are key components of the Bank's core funding and these amounted to \$269 billion as at October 31, 2017 (October 31, 2016 – \$266 billion). The increase since October 31, 2016, was primarily due to internal capital generation and the issuance of NVCC subordinated additional Tier 1 Capital Securities, net of redemptions of preferred shares and subordinated debentures. A portion of commercial deposits, particularly those of an operating or relationship nature, would be considered part of the Bank's core funding. Furthermore, core funding is augmented by longer term wholesale debt issuances (original maturity over 1 year) of \$140 billion (October 31, 2016 – \$141 billion). Longer term wholesale debt issuances include medium-term notes, deposit notes, mortgage securitization, asset-backed securities and covered bonds.

The Bank operates in many different currencies and countries. From a funding perspective, the most significant currencies are Canadian and U.S. dollars. With respect to the Bank's operations outside Canada, there are different funding strategies depending on the nature of the activities in each country. For those countries where the Bank operates a branch banking subsidiary, the strategy is for the subsidiary to be substantially self-funding in its local market. For other subsidiaries or branches outside Canada where local deposit gathering capability is not sufficient, funding is provided through the wholesale funding activities of the Bank.

From an overall funding perspective the Bank's objective is to achieve an appropriate balance between the cost and the stability of funding. Diversification of funding sources is a key element of the funding strategy.

The Bank's wholesale debt diversification strategy is primarily executed via the Bank's main wholesale funding centres, located in Toronto, New York, London and Singapore. The majority of these funds are sourced in Canadian and U.S. dollars. Where required, these funds are swapped to fund assets in different currencies. The funding strategy deployed by wholesale funding centres and the management of associated risks, such as geographic and currency risk, are managed centrally within the framework of policies and limits that are approved by the Board of Directors.

In the normal course, the Bank uses a mix of unsecured and secured wholesale funding instruments across a variety of markets. The choice of instruments and markets is based on a number of factors, including relative cost and market capacity as well as an objective of maintaining a diversified mix of sources of funding. Market conditions can change over time, impacting cost and capacity in particular markets or instruments. Changing market conditions can include periods of stress where the availability of funding in particular markets or instruments is constrained. In these circumstances the Bank would increase its focus on sources of funding in functioning markets and secured funding instruments. Should a period of extreme stress exist such that all wholesale funding sources are constrained, the Bank maintains a pool of liquid assets to mitigate its liquidity risk. This pool includes cash, deposits with central banks and securities.

In Canada, the Bank raises short- and longer-term wholesale debt through the issuance of senior unsecured deposit notes. Additional longer-term wholesale debt may be generated through the Bank's Canadian Debt and Equity Shelf, the securitization of Canadian insured residential mortgages through CMHC securitization programs (such as Canada Mortgage Bonds), uninsured residential mortgages through the Bank's Covered Bond Program, unsecured personal lines of credit through the Hollis Receivables Term Trust II Shelf, retail credit card receivables through the Trillium Credit Card Trust II Shelf and retail indirect auto loan receivables through the Securitized Term Auto Receivables Trust Program. While the Bank includes CMHC securitization programs in its view of wholesale debt issuance, this source of funding does not entail the run-off risk that can be experienced in funding raised from capital markets.

Outside of Canada, short-term wholesale debt may be raised through the issuance of negotiable certificates of deposit in the United States, Hong Kong and Australia and the issuance of commercial paper in the United States. The Bank operates longer-term wholesale debt issuance registered programs in the United States, such as its SEC Registered Debt and Equity Shelf, and non-registered programs, such as the securitization of retail indirect auto loan receivables through the Securitized Term Auto Receivables Trust program and the securitization of retail credit card receivables through the Trillium Credit Card Trust II program. The Bank's Covered Bond Program is listed with the U.K. Listing Authority, and the Bank may issue under the program in Europe, the United States, Australia and Switzerland. The Bank also raises longer-term funding across a variety of currencies through its Australian Medium Term Note Programme, European Medium Term Note Programme and Singapore Medium Term Note Programme. The Bank's European Medium Term Note Programme is listed with the U.K. Listing Authority, Swiss Stock Exchange and the Tokyo Pro-Bond Market. The Bank's Singapore Medium Term Note Programme is listed with the Singapore Exchange and the Taiwan Exchange.



The table below provides the remaining contractual maturities of funding raised through wholesale funding. In the Consolidated Statement of Financial Position, these liabilities are primarily included in Business & Government Deposits.

**T52 Wholesale funding<sup>(1)</sup>**

As at October 31, 2017 (\$ millions)	Less than 1 month	1-3 months	3-6 months	6-9 months	9-12 months	Sub-Total < 1 Year	1-2 years	2-5 years	>5 years	Total
Deposits from banks <sup>(2)</sup>	\$ 2,740	\$ 471	\$ 405	\$ 264	\$ 110	\$ 3,990	\$ 205	\$ 153	\$ –	\$ 4,348
Bearer deposit notes, commercial paper and certificate of deposits	7,699	12,227	22,351	12,740	7,557	62,574	5,685	495	12	68,766
Asset-backed commercial paper <sup>(3)</sup>	1,885	4,233	981	–	–	7,099	–	–	–	7,099
Medium term notes and deposit notes <sup>(4)</sup>	24	3,621	8,480	5,469	6,378	23,972	13,024	32,927	10,453	80,376
Asset-backed securities	–	1	–	1,162	215	1,378	822	1,975	351	4,526
Covered bonds	2,821	–	–	13	686	3,520	6,378	14,719	1,410	26,027
Mortgage securitization <sup>(5)</sup>	–	569	666	556	310	2,101	2,158	10,522	4,943	19,724
Subordinated debentures <sup>(6)</sup>	–	–	–	–	–	–	–	181	7,022	7,203
<b>Total wholesale funding sources</b>	<b>\$ 15,169</b>	<b>\$ 21,122</b>	<b>\$ 32,883</b>	<b>\$ 20,204</b>	<b>\$ 15,256</b>	<b>\$ 104,634</b>	<b>\$ 28,272</b>	<b>\$ 60,972</b>	<b>\$ 24,191</b>	<b>\$ 218,069</b>
<i>Of Which:</i>										
Unsecured funding	\$ 10,463	\$ 16,319	\$ 31,236	\$ 18,474	\$ 14,045	\$ 90,537	\$ 18,914	\$ 33,755	\$ 17,487	\$ 160,693
Secured funding	4,706	4,803	1,647	1,730	1,211	14,097	9,358	27,217	6,704	57,376
As at October 31, 2016 (\$ millions)	Less than 1 month	1-3 months	3-6 months	6-9 months	9-12 months	Sub-Total < 1 Year	1-2 years	2-5 years	>5 years	Total
Deposits from banks <sup>(2)</sup>	\$ 2,958	\$ 571	\$ 187	\$ 148	\$ 31	\$ 3,895	\$ 103	\$ 149	\$ –	\$ 4,147
Bearer deposit notes, commercial paper and certificate of deposits	11,434	16,838	25,324	8,181	7,357	69,134	3,151	333	–	72,618
Asset-backed commercial paper <sup>(3)</sup>	2,625	3,978	1,906	–	–	8,509	–	–	–	8,509
Medium term notes and deposit notes <sup>(4)</sup>	1,573	5,700	4,576	3,681	3,962	19,492	21,935	31,195	7,576	80,198
Asset-backed securities	–	451	25	26	189	691	1,218	1,555	417	3,881
Covered bonds	–	3,353	2,707	–	–	6,060	3,413	19,160	1,381	30,014
Mortgage securitization <sup>(5)</sup>	–	1,376	663	950	1,063	4,052	2,102	7,834	3,782	17,770
Subordinated debentures <sup>(6)</sup>	22	30	62	1	3	118	–	109	8,767	8,994
<b>Total wholesale funding sources</b>	<b>\$ 18,612</b>	<b>\$ 32,297</b>	<b>\$ 35,450</b>	<b>\$ 12,987</b>	<b>\$ 12,605</b>	<b>\$ 111,951</b>	<b>\$ 31,922</b>	<b>\$ 60,335</b>	<b>\$ 21,923</b>	<b>\$ 226,131</b>
<i>Of Which:</i>										
Unsecured funding	\$ 15,987	\$ 23,139	\$ 30,149	\$ 12,011	\$ 11,353	\$ 92,639	\$ 25,189	\$ 31,786	\$ 16,343	\$ 165,957
Secured funding	2,625	9,158	5,301	976	1,252	19,312	6,733	28,549	5,580	60,174

(1) Wholesale funding sources exclude repo transactions and bankers acceptances, which are disclosed in the T57 Contractual maturities. Amounts are based on remaining term to maturity.

(2) Only includes commercial bank deposits raised by Group Treasury.

(3) Wholesale funding sources also exclude asset-backed commercial paper issued by certain ABCP conduits that are not consolidated for financial reporting purposes.

(4) Includes Structured notes issued to institutional investors.

(5) Represents residential mortgages funded through Canadian Federal Government agency sponsored programs. Funding accessed through such programs does not impact the funding capacity of the Bank in its own name.

(6) Although subordinated debentures are a component of regulatory capital, they are included in this table in accordance with EDTF recommended disclosures.

Wholesale funding generally bears a higher risk of run-off in a stressed environment than other sources of funding. The Bank mitigates this risk through funding diversification, ongoing engagement with investors and by maintaining a large holding of unencumbered liquid assets. Unencumbered liquid assets of \$180 billion as at October 31, 2017 (October 31, 2016 – \$183 billion) were well in excess of wholesale funding sources that mature in the next twelve months.

### Contractual maturities and obligations

The table below provides the maturity of assets and liabilities as well as the off-balance sheet commitments as at October 31, 2017, based on the contractual maturity date.

From a liquidity risk perspective the Bank considers factors other than contractual maturity in the assessment of liquid assets or in determining expected future cash flows. In particular, for securities with a fixed maturity date, the ability and time horizon to raise cash from these securities is more relevant to liquidity management than contractual maturity. For other assets and deposits the Bank uses assumptions about rollover rates to assess liquidity risk for normal course and stress scenarios. Similarly, the Bank uses assumptions to assess the potential drawdown of credit commitments in various scenarios.

The Bank's contractual obligations include contracts and purchase obligations, including agreements to purchase goods and services that are enforceable, legally binding on the Bank and affect the Bank's liquidity and capital resource needs. The Bank leases a large number of its branches, offices and other locations. The majority of these leases are for a term of five years, with options to renew. The total cost of these leases, net of rental income from subleases, was \$444 million in 2017 (2016 – \$428 million). The increase primarily reflects higher contractual rents, partially offset by favourable forex impact.

## T53 Contractual maturities

As at October 31, 2017

(\$ millions)	Less than one month	One to three months	Three to six months	Six to nine months	Nine to twelve months	One to two years	Two to five years	Over five years	No specific maturity	Total
<b>Assets</b>										
Cash and deposits with financial institutions and precious metals	\$ 51,646	\$ 894	\$ 395	\$ 175	\$ 159	\$ 396	\$ 514	\$ 290	\$ 10,911	\$ 65,380
Trading assets	5,484	5,106	3,275	2,740	2,224	5,272	14,816	17,776	41,771	98,464
Financial instruments designated at fair value through profit or loss	–	–	–	–	–	13	–	–	–	13
Securities purchased under resale agreement and securities borrowed	73,346	16,966	3,732	1,087	188	–	–	–	–	95,319
Derivative financial instruments	3,544	4,558	2,084	1,418	1,274	4,303	8,375	9,808	–	35,364
Investment securities – available-for-sale	3,094	5,645	4,495	2,170	2,131	6,506	18,098	7,054	1,311	50,504
Investment securities – held-to-maturity	739	779	1,052	1,193	123	5,847	8,923	109	–	18,765
Loans	28,840	25,032	28,778	29,291	27,197	74,303	209,229	28,667	53,032	504,369
Residential mortgages	3,072	4,065	9,542	15,700	13,083	42,460	129,448	18,017	1,529 <sup>(1)</sup>	236,916
Personal and credit cards	3,980	2,309	3,124	3,322	3,217	10,899	20,601	5,293	50,586	103,331
Business and government	21,788	18,658	16,112	10,269	10,897	20,944	59,180	5,357	5,244 <sup>(2)</sup>	168,449
Allowance for credit losses	–	–	–	–	–	–	–	–	(4,327)	(4,327)
Customers' liabilities under acceptances	10,875	2,399	254	22	10	–	–	–	–	13,560
Other assets	–	–	–	–	–	–	–	–	33,535	33,535
<b>Liabilities and equity</b>										
Deposits	\$ 56,154	\$ 48,037	\$ 49,107	\$ 30,938	\$ 26,373	\$ 44,735	\$ 73,099	\$ 16,037	\$ 280,887	\$ 625,367
Personal	7,058	7,247	8,500	7,840	7,862	13,223	13,741	393	134,166	200,030
Non-personal	49,096	40,790	40,607	23,098	18,511	31,512	59,358	15,644	146,721	425,337
Financial instruments designated at fair value through profit or loss	–	3	5	118	133	543	2,882	979	–	4,663
Acceptances	10,875	2,399	254	22	10	–	–	–	–	13,560
Obligations related to securities sold short	336	167	97	148	1,057	3,354	9,229	9,935	6,443	30,766
Derivative financial instruments	2,810	3,348	1,786	1,258	1,347	3,056	11,534	9,061	–	34,200
Obligations related to securities sold under repurchase agreements and securities lent	85,636	8,452	1,524	229	2	–	–	–	–	95,843
Subordinated debentures	–	–	–	–	–	–	–	5,935	–	5,935
Other liabilities	1,419	1,076	440	824	187	1,369	3,223	4,314	30,462	43,314
Total equity	–	–	–	–	–	–	–	–	61,625	61,625
<b>Off-Balance sheet commitments</b>										
Operating leases	\$ 30	\$ 60	\$ 88	\$ 87	\$ 84	\$ 311	\$ 656	\$ 593	\$ –	\$ 1,909
Credit commitments <sup>(3)</sup>	4,661	5,913	12,862	18,293	17,254	24,091	97,773	4,819	–	185,666
Financial guarantees <sup>(4)</sup>	–	–	–	–	–	–	–	–	36,344	36,344
Outsourcing obligations <sup>(5)</sup>	19	37	54	53	53	207	517	–	1	941

(1) Includes primarily impaired mortgages.

(2) Includes primarily overdrafts and impaired loans.

(3) Includes the undrawn component of committed credit and liquidity facilities.

(4) Includes outstanding balances of guarantees, standby letters of credit and commercial letters of credit which may expire undrawn.

(5) The Bank relies on outsourcing arrangements for certain support and/or business functions, including, but not limited to, computer operations and cheque and bill payment processing. Outsourcing partners include, among others, IBM Canada and Symcor Inc.

As at October 31, 2016

(\$ millions)	Less than one month	One to three months	Three to six months	Six to nine months	Nine to twelve months	One to two years	Two to five years	Over five years	No specific maturity	Total
<b>Assets</b>										
Cash and deposits with financial institutions and precious metals	\$ 37,703	\$ 1,071	\$ 320	\$ 237	\$ 1,198	\$ 932	\$ 537	\$ 38	\$ 12,750	\$ 54,786
Trading assets	8,579	7,984	2,485	2,754	2,762	4,683	17,149	20,109	42,056	108,561
Financial instruments designated at fair value through profit or loss	–	–	–	–	205	–	16	–	–	221
Securities purchased under resale agreement and securities borrowed	70,343	13,250	6,156	1,541	839	–	–	–	–	92,129
Derivative financial instruments	2,311	3,041	1,210	1,218	900	3,694	9,986	19,297	–	41,657
Investment securities – available-for-sale	1,933	4,088	3,265	2,641	1,301	5,666	23,587	5,945	2,083	50,509
Investment securities – held-to-maturity	207	439	1,162	522	1,003	4,347	14,434	296	–	22,410
Loans	23,431	24,057	26,091	25,375	26,331	81,473	190,391	31,851	51,164	480,164
Residential mortgages	3,382	5,485	8,771	12,693	10,796	48,038	112,675	19,265	1,783 <sup>(1)</sup>	222,888
Personal and credit cards	2,790	2,484	2,902	3,154	2,777	10,277	20,914	5,813	48,391	99,502
Business and government	17,259	16,088	14,418	9,528	12,758	23,158	56,802	6,773	5,616 <sup>(2)</sup>	162,400
Allowance for credit losses	–	–	–	–	–	–	–	–	(4,626)	(4,626)
Customers' liabilities under acceptances	9,899	1,816	248	9	6	–	–	–	–	11,978
Other assets	–	–	–	–	–	–	–	–	33,851	33,851
<b>Liabilities and equity</b>										
Deposits	\$ 55,066	\$ 59,091	\$ 55,977	\$ 24,792	\$ 22,794	\$ 50,504	\$ 75,096	\$ 13,125	\$ 255,432	\$ 611,877
Personal	6,944	8,892	9,131	7,392	6,501	15,206	16,317	549	128,370	199,302
Non-personal	48,122	50,199	46,846	17,400	16,293	35,298	58,779	12,576	127,062	412,575
Financial instruments designated at fair value through profit or loss	–	4	–	–	3	110	1,038	304	–	1,459
Acceptances	9,899	1,816	248	9	6	–	–	–	–	11,978
Obligations related to securities sold short	80	200	388	897	22	2,755	4,544	9,039	5,387	23,312
Derivative financial instruments	1,711	2,237	1,399	1,399	1,035	4,267	10,473	19,866	–	42,387
Obligations related to securities sold under repurchase agreements and securities lent	87,130	7,050	215	335	2,352	1	–	–	–	97,083
Subordinated debentures	–	–	–	–	–	–	–	7,633	–	7,633
Other liabilities	568	819	591	316	550	1,434	2,432	4,094	31,912	42,716
Total equity	–	–	–	–	–	–	–	–	57,821	57,821
<b>Off-Balance sheet commitments</b>										
Operating leases	\$ 28	\$ 60	\$ 88	\$ 85	\$ 83	\$ 291	\$ 631	\$ 536	\$ –	\$ 1,802
Credit commitments <sup>(3)</sup>	5,081	5,170	12,498	15,381	20,870	15,723	93,842	5,680	–	174,245
Financial guarantees <sup>(4)</sup>	–	–	–	–	–	–	–	–	35,297	35,297
Outsourcing obligations	17	35	50	49	49	197	114	–	1	512

(1) Includes primarily impaired mortgages.

(2) Includes primarily overdrafts and impaired loans.

(3) Includes the undrawn component of committed credit and liquidity facilities.

(4) Includes outstanding balances of guarantees, standby letters of credit and commercial letters of credit which may expire undrawn.

## Other Risks

### Operational Risk

Operational risk is the risk of loss, resulting from people, inadequate or failed processes and systems, or from external events. Operational risk includes legal risk but excludes strategic risk and reputational risk. Operational risk in some form exists in each of the Bank's business and support activities and can result in financial loss, regulatory sanctions and damage to the Bank's reputation. Operational risk is inherent in all our activities, including the practices and controls used to manage other risks. Failure to manage operational risk can result in direct or indirect financial loss, but also in regulatory sanctions and reputational impact.

#### Governance and organization

The Bank's Operational Risk Management Framework sets out an integrated approach to identify, assess, control, mitigate and report operational risks across the Bank. The following are key components of the Bank's Operational Risk Management Framework:

- The Bank's Risk and Control Self-Assessment program, which includes formal reviews of significant units, operations and processes to identify and assess operational risks. This program provides a basis for management to ensure that key risks have been identified and that controls are functioning effectively. Business line management attests to the accuracy of each assessment and develops action plans to mitigate residual risk exposure, as appropriate.
- The Bank's scenario analysis program provides a forward looking view of key risks and provides management with insights into how plausible but highly unlikely operational risk events might occur. Scenario analysis will also assist in the selection of severity distributions in the Bank's Advanced Measurement Approach (AMA) capital model (discussed below).
- The Bank's Key Risk Indicator (KRI) program provides information on the level of exposure to a given operational risk to a particular point in time and can help to monitor potential shifts in risk conditions or new emerging risk and/or measure residual risk exposure and effectiveness of controls.
- The Business Environment and Internal Control Factors (BEICF) program incorporates the impact of key business environment and internal control factors into the regulatory capital allocated to divisions by utilizing a BEICF scorecard. The scorecard is used to adjust capital calculations produced using the Bank's AMA capital model and due to its forward-looking nature, it also assists with identifying new trends and emerging risks.
- The Bank's New Initiatives Risk Management Policy which describes the general principles applicable to the review, approval and implementation of new products and services within Scotiabank and is intended to provide overarching guidance.
- The Bank's centralized operational loss event database, which captures key information on operational losses and near-misses.
- The Bank's monitoring of industry events, identifies significant losses incurred at other financial institutions and provides a reference for reviewing and assessing the Bank's own risk exposure.
- The Bank's training programs, including the mandatory Anti-Money Laundering, Operational Risk and Information Security courses and examinations which ensure employees are aware and equipped to safeguard our customers' and the Bank's assets.
- Operational risk reporting is provided to the Bank's senior executive management and the Board of Directors, and includes information relating to key events, results, trends and themes across the operational risk tools. The combination of these information sources provides both a backward and forward-looking view of operational risk at the Bank.

#### Operational risk capital

There are two methods for the calculation of operational risk regulatory capital available to the Bank under Basel framework – The Standardized Approach and the Advanced Measurement Approach (AMA). In 2016, OSFI approved our application to use the Advanced Measurement Approach (AMA) for operational risk, subject to a capital floor. In 2017, we formally began utilizing AMA to report regulatory capital.

### Information Technology (IT) & Cybersecurity Risk

IT risk refers to the likelihood of failures or deficiencies related to the IT environment that may result in loss or other negative impact to the Bank. IT risk is the business risk associated with the use, ownership, operation, involvement, influence and adoption of IT within an enterprise. Cybersecurity risk is a sub-discipline of IT risk, and refers to the protection of information assets by addressing threats to information processed, stored, and transported by internetworked information systems. IT & Cybersecurity risk consists of information technology related events (e.g., cybersecurity incidents, outages) that could potentially have an adverse impact on our business. Such events could result in business interruption, service disruptions, theft of intellectual property and confidential information, additional regulatory scrutiny, litigation and reputational damage.

The Board of Directors approves the IT Risk Management Policy and the Information Security Policy to ensure the Bank's IT environment continues to be reliable, secure, resilient and robust in supporting its business strategies and objectives. The Bank has established an IT Risk Management Framework and Information Security Governance Framework to provide the structure for the effective implementation of those policies in the IT environment.

Protecting data and systems against an ever-changing array of digital threats remains a top risk priority for the Bank. The past year highlighted a large number of high-profile data breaches involving organizations of all sizes from multiple industries. As cyber-crimes are becoming more widespread, costly and time consuming to resolve, businesses are faced with an increased possibility of legal exposure, reputation damage, operational interruption and financial impact. The Bank continues to strengthen its cyber security program and is expanding its capabilities to defend against potential threats and minimize the impact of cyber security attacks. The Bank also regularly tests preparedness to respond to events outside of the Bank's direct control such as simulations of cyberattacks, and continually reviews and enhances its capabilities and infrastructure.

## Compliance Risk

Compliance Risk is the risk that a business activity may not be conducted in conformity with applicable Regulations, internal policies and procedures and ethical standards expected by regulators, customers, investors, employees and other stakeholders. "Regulations" means all Governmental Acts, laws, rules, regulations, regulatory guidelines and industry or self-regulatory organizational codes of conduct, rules and by-laws.

The Bank conducts business in many jurisdictions around the world and provides a wide variety of financial products and services through its various lines of business and operations. It is subject to, and must comply with, many and changing Regulations by governmental agencies, supervisory authorities and self-regulatory organizations in all the jurisdictions in which the Bank operates. The regulatory bar is constantly rising with Regulations being more vigorously enforced and new Regulations being enacted. The bar of public expectations is also constantly rising. Regulators and customers expect the Bank and its employees will operate its business in compliance with applicable laws and will refrain from unethical practices.

Compliance risk is managed on an enterprise-wide basis throughout the Bank via the operation of the Scotiabank Compliance Program ("the Program") which includes the appointment of a Chief Compliance and Regulatory Officer (CCRO) who serves as the Chief Compliance Officer for the Bank and is responsible for overseeing Compliance Risk Management within the Bank. The CCRO is responsible for assessing the adequacy of, adherence to and effectiveness of the Program, as well as for the development and application of written compliance policies and procedures that are kept up to date and approved by senior management, assessing and documenting compliance risks, developing and maintaining a written compliance training program, which in each case is performed either directly or indirectly by other departments within the Bank in coordination with Global Compliance. This program and these ancillary activities are subject to Internal Audit's periodic review to assess the effectiveness of the Program.

The Board-approved Scotiabank Compliance Policy describes the general policies and principles applicable to compliance risk management within Scotiabank and encompasses the Bank's Regulatory Compliance Management framework as contemplated by OSFI Guideline E-13. The Compliance Policy is an integral part of the enterprise-wide policies and procedures that collectively articulate the Bank's governance and control structure. Other more specifically focused compliance risk management policies and procedures may be developed within the framework established by the Compliance Policy where necessary or appropriate.

## Money Laundering & Terrorist Financing Risk

Money Laundering & Terrorist Financing (ML/TF) risk is the susceptibility of Scotiabank to be used by individuals or organizations to launder the proceeds of crime, finance terrorism, or violate economic sanctions. It also includes the risk that Scotiabank does not conform to applicable Anti-Money Laundering ("AML") / Anti-Terrorist Financing ("ATF") or sanctions legislation, or does not apply adequate controls reasonably designed to deter and detect ML/TF and sanctions violations or to file any required regulatory reports.

Money laundering, terrorist financing, and sanctions risks are managed throughout the Bank via the operation of the Bank's AML/ATF and Sanctions program ("the Program") which includes the appointment of a Chief Anti-Money Laundering Officer responsible for the Program, development and application of written compliance policies and procedures that are kept up to date and approved by senior management, assessing and documenting the risk of money laundering, terrorist-financing or sanctions violations, developing and maintaining a written ongoing compliance training program, and regular review of the effectiveness of the Program conducted by Internal Audit. The Chief Anti-Money Laundering Officer has unfettered access to, and direct communication with, Executive Management of the Bank and its Board.

In providing financial services to its customers, the Bank conducts Customer Due Diligence sufficient to form a reasonable belief that it knows the true identity of its customers, including in the case of an entity customer its material beneficial owners. The Bank will not maintain anonymous accounts, nor will it maintain accounts for shell banks. Consistent with a risk-based approach, the Bank assesses the risks of its customers and, where appropriate, conducts enhanced due diligence on those who are considered higher risk. The Bank also conducts ongoing risk-based monitoring of its customers to detect and report suspicious transactions, and conducts customer and transaction screening against terrorist, sanctions, and other designated watch-lists. All employees are provided with mandatory AML/ATF training on an annual basis.

The Bank's business units conduct an annual self-assessment of their ML/TF risks, as well as self-assessments of their control measures designed to manage such risks. The process is overseen by the Bank's Global AML/ATF Unit and the results shared with the Bank's Senior Management and its Board.

## Reputational Risk

Reputational risk is the risk that negative publicity regarding Scotiabank's conduct, business practices or associations, whether true or not, will adversely affect its revenues, operations or customer base, or require costly litigation or other defensive measures.

Negative publicity about an institution's business practices may involve any aspect of its operations, but usually relates to questions of business ethics and integrity, or quality of products and services. Negative publicity and attendant reputational risk frequently arise as a by-product of some other kind of risk management control failure.

Reputational risk is managed and controlled throughout the Bank by codes of conduct, governance practices and risk management programs, policies, procedures and training. Many relevant checks and balances are outlined in greater detail under other risk management sections, particularly Operational Risk, where reference is made to the Bank's well-established compliance program. All directors, officers and employees have a responsibility to conduct their activities in accordance with the Scotiabank's Code of Conduct, and in a manner that minimizes reputational risk. While all employees, officers and directors are expected to protect the reputation of Scotiabank by complying with the Scotiabank's Code of Conduct, the activities of the Legal, Corporate Secretary, Public, Corporate and Government Affairs and Compliance departments, and the Reputational Risk Committee, are particularly oriented to the management of reputational risk.

In providing credit, advice, or products to customers, or entering into associations, the Bank considers whether the transaction, relationship or association might give rise to reputational risk. The Bank has an established, Board-approved Reputational Risk Policy, as well as policy and procedures for managing reputational and legal risk related to structured finance transactions. Global Risk Management plays a significant role in the identification and management of reputational risk related to credit underwriting. In addition, the Reputational Risk Committee is available to support Global Risk Management, as well as other risk management committees and business units, with their assessment of reputational risk associated with transactions, business initiatives, and new products and services.

The Reputational Risk Committee considers a broad array of factors when assessing transactions, so that the Bank meets, and will be seen to meet, high ethical standards. These factors include the extent, and outcome, of legal and regulatory due diligence pertinent to the transaction; the economic intent of the transaction; the effect of the transaction on the transparency of a customer's financial reporting; the need for customer or public disclosure; conflicts of interest; fairness issues; and public perception.

The Committee may impose conditions on customer transactions, including customer disclosure requirements to promote transparency in financial reporting, so that transactions meet Bank standards. In the event the Committee recommends not proceeding with a transaction and the sponsor of the transaction wishes to proceed, the transaction is referred to the Risk Policy Committee.

## Environmental Risk

**Environmental risk refers to the possibility that environmental concerns involving Scotiabank or its customers could affect the Bank's performance.**

To safeguard the Bank and the interests of its stakeholders, Scotiabank has an environmental policy, which is approved by the Bank's Board of Directors. The policy guides day-to-day operations, lending practices, supplier agreements, the management of real estate holdings and external reporting practices. It is supplemented by specific policies and practices relating to individual business lines.

Environmental risks associated with the business operations of each borrower and any real property offered as security are considered in the Bank's credit evaluation procedures. This includes an environmental assessment where applicable, and commentary on the impact of climate (including regulatory, physical or reputational impacts) on the borrower. Global Risk Management has primary responsibility for establishing the related policies, processes and standards associated with mitigating environmental risk in the Bank's lending activities. Decisions are taken in the context of the risk management framework.

In the area of project finance, the Equator Principles have been integrated into the Bank's internal processes and procedures since 2006. The Equator Principles help financial institutions determine, assess, manage and report environmental and social risk. The principles apply to project finance loans and advisory assignments where total capital costs exceed US\$10 million, and to certain project-related corporate loans. The Equator Principles provide safeguards for sensitive projects to ensure protection of natural habitats and the rights of indigenous peoples, as well as safeguards against the use of child and forced labour.

The Bank's Environmental Policy plays a prominent role in guiding the reduction of the Bank's environmental footprint. The Real Estate Department adheres to an Environmental Compliance Policy to ensure responsible management of the Bank's real estate holdings from an environmental perspective. In addition, a variety of reduction measures are in place for energy, paper and waste in the Bank's corporate offices and branch networks. Internal tracking systems are in place with respect to energy use, greenhouse gas emissions (GHG) and paper consumption. Since 2012, GHG emissions data for the branch network and corporate offices has been externally verified.

To ensure it continues to operate in an environmentally responsible manner, the Bank monitors policy and legislative requirements through ongoing dialogue with government, industry and stakeholders in countries where it operates. Scotiabank has been meeting with environmental organizations, industry associations and socially responsible investment organizations with respect to the role that banks can play to help address issues such as climate change, protection of biodiversity, promotion of sustainable forestry practices, implementing the recommendations of the Task Force on Climate-related Financial Disclosure, and other environmental issues important to its customers and communities where it operates. The Bank has an ongoing process of reviewing its practices in these areas.

Scotiabank has a number of environmentally focused products and services, including: an EcoEnergy Financing program designed to support personal and small business customers who wish to install small-scale renewable energy projects; and an auto loan product for hybrid, electric and clean diesel vehicles. As well, Scotiabank has the Commodities Derivatives group, which assists corporate clients by providing liquidity and hedge solutions in the carbon market.

## Environmental Reporting

Scotiabank is also a signatory to, and participant in the Carbon Disclosure Project, which provides corporate disclosure to the investment community on greenhouse gas emissions and climate change management. Further information is available in the Bank's annual Corporate Social Responsibility Report.

## Insurance Risk

**The Bank is both a distributor of third party insurance products and underwriter of insurance risk. As a distributor of third party insurance products, the Bank earns fees but bears no insurance risk. The Bank bears insurance risk in its role as an underwriter, either through direct underwriting or via reinsurance.**

**Insurance risk is the risk of potential financial loss due to actual experience being different from that assumed in the pricing process of the insurance products.**

Insurance by nature involves the distribution of products that transfer individual risks to the issuer with the expectation of a return built into the insurance premiums earned. The Bank is exposed to insurance risk primarily through its creditor, life and select property and casualty insurance and reinsurance products.

The insurance governance and risk management frameworks are calibrated within each insurance subsidiary commensurate with the nature and materiality of risk assumed. Senior management within the insurance business subsidiaries has primary responsibility for managing insurance risk, with oversight by Global Risk Management through the Insurance Risk Committee. The insurance subsidiaries have their own boards of directors, as well as independent appointed actuaries who provide additional risk management oversight.

The insurance subsidiaries maintain a number of policies and practices to manage insurance risk. Sound product design is an essential element. The vast majority of risks insured are short-term in nature, that is, they do not involve long-term pricing guarantees. Geographic diversification and product-line diversification are important elements as well. Reinsurance is commonly used as an effective tool to manage the insurance risk exposures. Insurance risk is also managed through effective underwriting and claim adjudication practices, ongoing monitoring of experience, and stress-testing scenario analysis.

## Strategic Risk

**Strategic risk is the risk that the enterprise, business lines or corporate functions will make strategic choices that are ineffective or insufficiently resilient to changes in the business environment, or poorly execute such strategies.**

---

The Board of Directors is ultimately responsible for oversight of strategic risk, by adopting a strategic planning process and approving, on an annual basis, a strategic plan for the Bank.

The Bank manages its strategic planning process through a series of coordinated efforts between the Executive Management Team, the Business Lines and the Corporate Functions. These efforts address a wide range of relevant considerations including capital and resource allocation, business initiatives, strategic transactions and investments, stress testing and alignment with the Bank's Risk Appetite Framework. These considerations are reviewed in a consistent and disciplined manner. The process involves input from the entire Executive Management Team and from the Board of Directors.

On an annual basis, a comprehensive update on the Strategic Agenda is prepared that summarizes the Bank's key strategic considerations, and is presented by the President and Chief Executive Officer to the Board of Directors for their review and approval.

The execution and evaluation of strategic plans within the Bank is critically important to the Bank's enterprise-wide risk management framework. The Bank makes continuous efforts to ensure that all employees are aware of the Bank's overall strategic direction, and that employees are also aware of the strategies and objectives for their respective business line or corporate function. On an ongoing basis, the business lines and corporate functions identify, manage and assess the internal and external considerations – including risk factors – that could affect the achievement of their strategic objectives. These matters are considered on an enterprise-wide basis by the Bank's Executive Management Team, which makes adjustments, as required.



## CONTROLS AND ACCOUNTING POLICIES

### Controls and Procedures

Management's responsibility for financial information contained in this annual report is described on page 126.

#### Disclosure controls and procedures

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

As of October 31, 2017, the Bank's management, with the participation of the President and Chief Executive Officer and Group Head and Chief Financial Officer, evaluated the effectiveness of its disclosure controls and procedures, as defined under the rules adopted by the U.S. Securities and Exchange Commission (SEC) and the Canadian securities regulatory authorities, and have concluded that the Bank's disclosure controls and procedures are effective.

#### Internal control over financial reporting

Management of the Bank is responsible for establishing and maintaining adequate internal control over financial reporting. These controls include policies and procedures that:

- pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Bank;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB), and that receipts and expenditures are being made only in accordance with authorizations of management and directors of the Bank; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Bank's assets that could have a material effect on the financial statements.

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

Management assessed the effectiveness of internal control over financial reporting, using the Internal Control-Integrated Framework 2013 issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and based on that assessment concluded that internal control over financial reporting was effective as of October 31, 2017.

#### Changes in internal control over financial reporting

There have been no changes in the Bank's internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, the Bank's internal control over financial reporting during the year ended October 31, 2017.

### Critical Accounting Estimates

The Bank's accounting policies are integral to understanding and interpreting the financial results reported in this annual report. Note 3 to the Consolidated Financial Statements, summarizes the significant accounting policies used in preparing the Bank's consolidated financial statements. Certain of these policies require management to make estimates, assumptions and subjective judgements that are difficult, complex, and often relate to matters that are inherently uncertain. The policies discussed below are considered to be particularly important to the presentation of the Bank's financial position and results of operations, because changes in the estimates, assumptions and judgements could have a material impact on the Bank's consolidated financial statements. These estimates, assumptions and judgements are adjusted in the normal course of business to reflect changing underlying circumstances.

#### Allowance for credit losses

The allowance for credit losses represents management's best estimate of the probable credit losses in the portfolio of deposits with other institutions, loans to borrowers and acceptances. Management undertakes regular reviews of credit quality to assess the adequacy of the allowance for credit losses. This process requires the use of estimates, assumptions and subjective judgements at many levels. These subjective judgements include identifying credits that are impaired, and considering factors specific to individual credits, as well as portfolio characteristics and risks. Changes to these estimates or use of other reasonable judgements could directly affect the provision for credit losses.

The allowance for credit losses is comprised of collective and individually assessed allowances.

Allowances in respect of individually significant credit exposures are an estimate of probable incurred losses related to existing impaired loans. In establishing these allowances applicable to individual credit exposures, management individually assesses each loan for objective indicators of impairment and forms a judgement as to whether the loan is impaired. Loan impairment is recognized when, in management's opinion, there is no longer reasonable assurance that interest and principal payments will be collected based on original contractual terms. Once a loan is determined to be impaired, management estimates its net realizable value by making judgements relating to the timing of future cash flow amounts, the fair value of any underlying security pledged as collateral, costs of realization, observable market prices, and expectations about the future prospects of the borrower and any guarantors.

Individual provisions were lower in 2017 than in 2016 across all business lines.

For loans that have not been individually assessed as impaired, the Bank pools them into groups to assess on a collective basis. Collective allowances are calculated for performing loans and impaired loans.

Retail loans represented by residential mortgages, credit card loans and most personal loans are considered by the Bank to be homogenous groups of loans that are not considered individually significant and are assessed on a collective basis. Mortgages are collectively assessed for impairment, taking into account number of days past due, historical loss experience and incorporating both qualitative and quantitative factors including the current business and economic environment and the realizable value of the collateral to determine the appropriate value 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. This methodology employs statistical analysis of historical data and experience of delinquency and default to estimate the amount of loans that will be eventually written off as a result of events not identifiable on an individual loan basis.

An allowance is also determined in respect of probable incurred losses that are inherent in the portfolio, of performing loans, but have not yet been specifically identified on an individual basis. Management establishes this allowance on a collective basis through an assessment of quantitative and qualitative factors. Using an internally developed methodology, management arrives at an initial quantitative estimate of the collective allowance for the performing portfolio based on numerous factors, including historical average default probabilities, loss given default rates and exposure at default factors. Material changes in any of these parameters or assumptions would affect the range of expected credit losses and, consequently, could affect the collective allowance level. For example, if either the probability of default or the loss given default rates for the non-retail portfolio were independently increased or decreased by 10%, the methodology would indicate an increase or decrease to the quantitative estimate of approximately \$70 million (2016 – \$71 million).

A qualitative assessment of the collective allowance is made based on observable data, such as: economic trends and business conditions, portfolio concentrations, risk migrations and recent trends in volumes and severity of delinquencies, and a component for the imprecision inherent in the methodology and parameters. Management reviews the collective allowance quarterly to assess whether the allowance is at the appropriate level in relation to the size of the portfolio, inherent credit risks and trends in portfolio quality.

The total collective allowance for credit losses as at October 31, 2017, was \$3,355 million, a decrease of \$143 million from a year earlier. Of the collective allowance amount, \$625 million is attributable to business and government performing loans (2016 – \$662 million), with the remainder allocated to personal lending and credit cards of \$2,303 million (2016 – \$2,258 million) and residential mortgages of \$427 million (2016 – \$578 million). These amounts for personal lending and credit cards, and for residential mortgages include allowances for both performing and impaired loans.

### Fair value of financial instruments

All financial instruments are measured at fair value on initial recognition. Subsequent measurement of a financial instrument depends on its classification. Non-trading loans and receivables, certain securities and most financial liabilities are carried at amortized cost unless classified or designated as fair value through profit and loss or available-for-sale at inception. All other financial instruments, including those designated as fair value through profit and loss at inception, are carried at 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 best evidence of fair value for a financial instrument is the quoted price in an active market. Quoted market prices represent a Level 1 valuation. Quoted prices are not always available for over-the-counter transactions, as well as transactions in inactive or illiquid markets. In these instances, internal models that maximize the use of observable inputs are used to estimate fair value. The chosen valuation technique incorporates all the factors that market participants would take into account in pricing a transaction. When all significant inputs are observable, the valuation is classified as Level 2. Financial instruments traded in a less active market have been valued using indicative market prices, present value of cash flows or other valuation techniques. Fair value estimates normally do not consider forced or liquidation sales. Where financial instruments trade in inactive markets or when using models where observable parameters do not exist, greater management judgement is required for valuation purposes such as multiple of the underlying earnings, pricing by third party providers, discount rates, volatilities and correlations. Valuations that require the significant use of unobservable inputs are considered Level 3. The calculation of estimated fair value is based on market conditions at a specific point in time and therefore may not be reflective of future fair values.

The Bank has controls and processes in place to ensure that the valuation of financial instruments is appropriately determined. Global Risk Management (GRM) is responsible for the design and application of the Bank's risk management framework. GRM is independent from the Bank's business units and is overseen by Executive Management and the Board of Directors. Senior management committees within GRM oversee and establish standards for risk management processes that are critical in ensuring that appropriate valuation methodologies and policies are in place for determining fair value.

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

Where quoted prices are not readily available, such as for transactions in inactive or illiquid markets, internal models that maximize the use of observable inputs are used to estimate fair value. An independent senior management committee within GRM oversees the vetting, approval and ongoing validation of valuation models used in determining fair value. Risk policies associated with model development are approved by Executive Management and/or key risk committees.

In determining fair value for certain instruments or portfolios of instruments, valuation adjustments or reserves may be required to arrive at a more accurate representation of fair value. The Bank's policy of applying valuation reserves to a portfolio of instruments is approved by a senior management committee. These reserves include adjustments for credit risk, bid-offer spreads, unobservable parameters, constraints on prices in inactive or illiquid markets and when applicable funding costs. The methodology for the calculation of valuation reserves are reviewed at least annually by senior management.

Valuation adjustments recorded against the fair value of financial assets and financial liabilities totaled \$94 million as at October 31, 2017, (2016 – \$119 million), net of any write-offs. These valuation adjustments are due mainly to credit risk considerations and bid-offer spreads on derivative transactions.

As at October 31, 2017, a funding valuation adjustment (FVA) of \$80 million pre-tax (2016 – \$92 million) was recorded relating to uncollateralized derivative instruments.

The Bank discloses the classification of all financial instruments carried at fair value in a hierarchy based on the determination of fair value. The valuation hierarchy is as follows:

- Level 1 – fair value is based on unadjusted quoted prices in active markets for identical instruments,

- Level 2 – fair value is based on models using significant market-observable inputs other than quoted prices for the instruments, or
- Level 3 – fair value is based on models using significant inputs that are not based on observable market data.

The Bank's assets and liabilities which are carried at fair value as classified by the valuation hierarchy are reflected in Note 6. The percentage of each asset and liability category by fair value hierarchy level are outlined as follows:

#### T54 Fair value hierarchy of financial instruments carried at fair value

Fair value hierarchy As at October 31, 2017	Assets			Liabilities	
	Trading assets (incl. precious metals)	Available-for-sale securities	Derivatives	Obligations related to securities sold short	Derivatives
Level 1	62%	58%	2%	90%	2%
Level 2	38%	40%	98%	10%	97%
Level 3	–%	2%	–%	–%	1%
	100%	100%	100%	100%	100%

#### Impairment of investment securities

Investment securities are evaluated for impairment at the end of each reporting date, 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 considered objective evidence of impairment. A significant decline in fair value is evaluated against the original cost of the asset at initial recognition; whereas for prolong, the decline is evaluated against the continuous period in which the fair value of the asset has been lower than its original cost at initial recognition. In the case of debt instruments classified as available-for-sale and held-to-maturity investment securities, the criteria for assessment of impairment is consistent with the criteria for impairment of loans.

When a decline in value of available-for-sale debt or equity instrument is due to impairment, the value of the security is written down to fair value. The 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 other operating 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.

As at October 31, 2017, the gross unrealized gains on available-for-sale securities recorded in accumulated other comprehensive income were \$381 million (2016 – \$740 million), and the gross unrealized losses were \$422 million (2016 – \$285 million). Net unrealized losses were therefore \$41 million (2016 – gains of \$455 million) before hedge amounts. The net unrealized losses after hedge amounts were \$48 million (2016 – gains of \$26 million).

At October 31, 2017, the unrealized loss recorded in accumulated other comprehensive income relating to securities in an unrealized loss position for more than 12 months was \$263 million (2016 – \$206 million). This unrealized loss was comprised of \$132 million (2016 – \$11 million) in debt securities, \$87 million (2016 – \$160 million) related to preferred shares and \$44 million (2016 – \$35 million) related to common shares. The unrealized losses on the debt securities arose primarily from changes in interest rates and credit spreads. For debt securities, based on a number of considerations, including underlying credit of the issuers, the Bank expects that future interest and principal payments will continue to be received on a timely basis in accordance with the contractual terms of the security.

#### Employee benefits

The Bank sponsors a number of employee benefit plans, including pension and other benefit plans for eligible employees in Canada, and internationally. The pension plans include both defined benefit plans, which are generally based on years of service and average earnings at retirement as well as defined contribution plans. Other benefits generally include post-retirement health care, dental care and life insurance, along with other long-term employee benefits such as long-term disability.

Employee benefit expense and the related benefit obligation are calculated using actuarial methods and certain actuarial assumptions. These assumptions are based on management's best estimate and are reviewed and approved annually. The management assumptions with the greatest potential impact are the discount rates. These rates are used for measuring the benefit obligation, service cost and interest cost. Prior to 2016 the discount rate used to determine annual benefit expense was the same as the rate used to determine the defined benefit obligation. Beginning in 2016, separate discount rates were used to determine the annual benefit expense in Canada and the US. These rates were determined with reference to the yields on high quality corporate bonds with durations that match the various components of the annual defined 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. If the assumed discount rates were 1% lower, the benefit expense for 2017 would have been \$119 million higher. Other key assumptions include future compensation, health care costs, employee turnover, retirement age and mortality. When making these estimates, management considers expectations of future economic trends and business conditions, including inflation rates as well as other factors, such as plan specific experience and best practices.

The Bank uses a measurement date of October 31, and based on this measurement date, the Bank reported a deficit of \$513 million in its principal pension plans and a deficit of \$1,392 million in its principal other benefit plans, which are typically unfunded, as at October 31, 2017, as disclosed in Note 27 to the consolidated financial statements.

Actual experience that differs from assumptions made by management will result in a net actuarial gain or loss recognized immediately in other comprehensive income except for other long-term employee benefits where they are recognized in the Consolidated Statement of Income.

Note 27 contains details of the Bank's employee benefit plans, such as the disclosure of pension and other benefit amounts, management's key assumptions, and a sensitivity analysis of changes in these assumptions on the employee benefit obligation and expense.

### Corporate income taxes

Management exercises judgment in determining the provision for income taxes and deferred income tax assets and liabilities. The provision is based on management's expectations regarding the income tax consequences of transactions and events during the period. Management interprets the tax legislation for each jurisdiction in which the Bank operates and makes assumptions about the expected timing of the reversal of deferred income tax assets and liabilities. If management's interpretations of the legislation differ from those of the tax authorities or if the actual timing of the reversals of the deferred income tax assets and liabilities is not as anticipated, the provision for income taxes could increase or decrease in future periods.

Total deferred tax assets related to the Bank's unused income tax losses from operations arising in prior years were \$417 million as at October 31, 2017 (2016 – \$484 million). The tax related to temporary differences, unused tax losses and unused tax credits for which no deferred tax asset is recognized in the Consolidated Statement of Financial Position amounted to \$82 million (2016 – \$55 million). The amount related to unrecognized tax losses was \$9 million, which will expire as follows: \$4 million in 2021 and beyond and \$5 million have no fixed expiry date.

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

In November 2016, the Bank received a federal reassessment of \$179 million for tax and interest as a result of the Canada Revenue Agency denying the tax deductibility of certain Canadian dividends received during the 2011 taxation year. In August 2017, the Bank received a reassessment of \$185 million for tax and interest for the 2012 taxation year. The circumstances of the dividends subject to the reassessment are similar to those prospectively addressed by recently enacted rules which had been introduced in the 2015 Canadian federal budget. The Bank is confident that its tax filing position was appropriate and in accordance with the relevant provisions of the Income Tax Act (Canada), and intends to vigorously defend its position.

Note 26 of the 2017 consolidated financial statements contains further details with respect to the Bank's provisions for income taxes.

### Structured entities

In the normal course of business, the Bank enters into arrangements with structured entities on behalf of its customers and for its own purposes. These structured entities can be generally categorized as multi-seller commercial paper conduits, Bank funding vehicles and structured finance entities. Further details are provided in the off-balance sheet arrangements section.

Management is required to exercise judgement to determine whether a structured entity should be consolidated. This evaluation involves understanding the arrangements, determining whether decisions about the relevant activities are made by means of voting rights or other contractual arrangements and determining whether the Bank controls the structured entity.

The Bank controls an investee when it is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. The three elements of control are:

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

This definition of control applies to circumstances:

- when voting rights or similar rights give the Bank power, including situations where the Bank holds less than a majority of voting rights or involving potential voting rights;
- when an investee is designed so that voting rights are not the dominant factor in deciding who controls the investee (i.e., relevant activities are directed by contractual arrangements);
- involving agency relationships; and
- when the Bank has control over specified assets of an investee.

The Bank does not control an investee when it is acting in an agent's capacity. The Bank assesses whether it is an agent by determining whether it is primarily engaged to act on behalf and for the benefit of another party or parties. Factors that the Bank considers in this assessment include the scope of its decision-making authority over the investee, the rights held by other parties, the remuneration to which it is entitled, and the Bank's exposure to variability of returns from other interests that it holds in the investee.

The analysis uses both qualitative and quantitative analytical techniques and involves the use of a number of assumptions about the business environment in which the structured entity operates and the amount and timing of future cash flows.

The Bank reassesses whether it controls an investee if facts and circumstances indicate that one or more of the three elements of control change.

Management is required to exercise judgement to determine if a change in control event has occurred.

During 2017, there were no change in control events that caused the Bank to change its control conclusion of its multi-seller conduits or other structured entities.

As described in Note 14 to the consolidated financial statements and in the discussion of off-balance sheet arrangements, the Bank does not control the two Canadian-based multi-seller conduits that it sponsors and they are not required to be consolidated on the Bank's Consolidated Statement of Financial Position. The Bank controls its U.S.-based multi-seller conduit and consolidates it on the Bank's Consolidated Statement of Financial Position.

### Goodwill

For the purpose of impairment testing, goodwill acquired in a business combination is, on the acquisition date, allocated to each of the Bank's group of cash-generating units (CGU) that are expected to benefit from the particular acquisition.

Goodwill is not amortized but tested for impairment annually and when circumstances indicate that the carrying value may be impaired.

Goodwill is reviewed at each reporting date to determine whether there is any indication of impairment. Each CGU to which goodwill is allocated for impairment testing purposes reflects the lowest level at which goodwill is monitored for internal management purposes.

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

Significant judgement is applied in determining the recoverable amounts of the CGU and assessing whether certain events or circumstances constitute objective evidence of impairment.

Goodwill was assessed for annual impairment based on the methodology as at July 31, 2017, and no impairment was determined to exist.

### Indefinite life intangible assets

Intangible assets with indefinite useful lives are not amortized but tested for impairment annually and when circumstances indicate that the carrying value may be impaired. Intangible assets are reviewed at each reporting date to determine whether there is any indication of impairment.

The recoverable amount is the greater of fair value less costs of disposal and value in use. If either fair value less costs of disposal or value in use exceeds the carrying amount, there is no need to determine the other. Value in use method is used by the Bank to determine the recoverable amount of the intangible asset. In determining value in use, an appropriate valuation model is used which considers factors such as management-approved cash flow projections, discount rate and terminal growth rate. An impairment loss is recognized if the carrying amount of the intangible asset exceeds its recoverable amount. Impairment losses recognized in prior periods are reassessed at each reporting period for any indication that the loss has decreased or no longer exists. An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the intangible asset's carrying amount does not exceed the carrying amount that would have been determined if no impairment loss had been recognized.

The recoverable amount is significantly impacted by the discount rate and the terminal value. Significant judgement is applied in determining the intangible asset's recoverable amount and assessing whether certain events or circumstances constitute objective evidence of impairment.

Intangible assets were assessed for annual impairment based on the methodology as at July 31, 2017, and no impairment was determined to exist.

### Provisions

The Bank recognizes a provision if, as a result of a past event, the Bank has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Probable in this context means more likely than not. Significant judgement is required in determining whether a present obligation exists and in estimating the probability, timing, and amount of any future outflows.

#### *Off-balance sheet credit risks*

The provisions for off-balance sheet credit risks relate primarily to off-balance sheet credit risks such as undrawn lending commitments, letters of credit and letters of guarantee. These are collectively assessed in a manner consistent with the collective allowance for performing on-balance sheet credit risks.

#### *Restructuring*

Certain of the Bank's provisions relate to restructuring as part of the Bank's efforts to enhance the customer experience, drive digital transformation and improve productivity. Restructuring provisions are primarily related to employee severance and require management's best estimate of the amount required to settle the obligation. Uncertainty exists with respect to when the obligation will be settled and the amounts ultimately paid, as this will largely depend upon individual facts and circumstances. The restructuring provision is expected to be utilized in line with the approved plans; the actual utilization will be assessed quarterly and may lead to changes in the provision amount recorded.

#### *Litigation and other*

In the ordinary course of business, the Bank and its subsidiaries are routinely defendants in, or parties to a number of pending and threatened legal actions and regulatory proceedings, including actions brought on behalf of various classes of claimants. In view of the inherent difficulty of predicting the outcome of such matters, the Bank cannot state what the eventual outcome of such matters will be.

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

### Future Accounting Developments

The Bank actively monitors developments and changes in accounting standards from the IASB as well as regulatory requirements from the Canadian Securities Administrators and OSFI.

#### Effective November 1, 2017

##### *IFRS 9 Financial instruments*

On July 24, 2014, the IASB issued IFRS 9 *Financial Instruments* ("the Standard"), which will replace IAS 39. The Standard covers three broad topics: Classification and Measurement, Impairment and Hedging. In line with OSFI's advisory, all Canadian D-SIBs, including the Bank are required to early adopt IFRS 9 effective November 1, 2017.

In June 2016, OSFI issued "IFRS 9 Financial Instruments and Disclosures" which provides guidance on the application of IFRS 9 that is consistent with the BCBS guidance issued in 2015.

### *Governance and project management*

The adoption of IFRS 9 is a significant initiative for the Bank, involving substantial finance, risk management and technology resources. The project was managed through a strong governance structure across risk management, finance, technology, and the business units. The Bank's existing system of internal controls will be refined and revised where required to meet all the requirements of IFRS 9. The Bank has applied many components of its existing governance framework to ensure that appropriate validations and controls will be in place over new key processes and significant areas of judgment. Adoption of IFRS 9 in 2018 has resulted in revisions to accounting policies and procedures, changes and amendments to internal control documents, applicable credit risk manuals, development of new risk models and associated methodologies and new processes within risk management. Periodic reporting on the progress against plan and results of parallel run was provided to Bank senior management throughout Fiscal 2017.

The following is a summary of some of the more significant items that are likely to be important in understanding the impact of the implementation of IFRS 9:

### *Classification and measurement*

The Standard introduces new requirements to determine the measurement basis of financial assets, involving the cash flow characteristics of assets and the business models under which they are managed. Accordingly, the basis of measurement for the Bank's financial assets may change. The Standard affects the accounting for available-for-sale equity securities, requiring a designation, by portfolio, between recording both unrealized and realized gains either through (i) OCI with no recycling to income or (ii) Income Statement. As a result, the amount of equity securities gains recorded through income is expected to be lower than current levels and levels recorded in recent years. For other financial instruments, the Bank does not expect the implementation will result in a significant change in the classification and measurement of the Bank's financial assets, between Amortized cost, Fair Value through OCI and Fair Value through Income Statement.

### *Hedge Accounting*

IFRS 9 also incorporates new hedge accounting rules that intend to align hedge accounting with risk management practices. IFRS 9 includes an accounting policy choice to defer the adoption of IFRS 9 hedge accounting and to continue with IAS 39 hedge accounting. The Bank has decided to exercise this accounting policy choice. However, the Bank will implement the revised hedge accounting disclosures that are required by the IFRS 9 related amendments to IFRS 7 "Financial Instruments: Disclosures" in its fiscal 2018 Annual Report.

### *Impairment*

The adoption of IFRS 9 will have a significant impact on the Bank's impairment methodology. The IFRS 9 expected credit loss (ECL) model is forward looking compared to the current incurred loss approach. Expected credit losses reflect 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. ECL should reflect an unbiased, probability-weighted outcome as opposed to the single best estimate allowed under the current approach. The probability-weighted outcome considers multiple scenarios based on reasonable and supportable forecasts.

The Bank's approach leveraged the existing regulatory capital models and processes for most of the Bank's loan portfolios that use the existing Advanced Internal Ratings Based (AIRB) credit models for regulatory capital purposes. For other portfolios that use the Standardized approach to compute regulatory capital, the Bank developed new methodologies and models taking into account the relative size, quality and complexity of the portfolios. IFRS 9 considers the calculation of ECL by multiplying the Probability of default (PD), Loss Given Default (LGD) and Exposure at Default (EAD).

IFRS 9 Impairment model uses a three stage approach based on the extent of credit deterioration since origination:

*Stage 1* – 12-month ECL applies to all financial assets that have not experienced a significant increase in credit risk (SIR) since origination and are not credit impaired. The ECL will be computed using a 12-month PD that represents the probability of default occurring over the next 12 months. For those assets with a remaining maturity of less than 12 months, a PD is used that corresponds to remaining maturity. This Stage 1 approach is different than the current approach which estimates a collective allowance to recognize losses that have been incurred but not reported on performing loans.

*Stage 2* – When a financial asset experiences a SIR subsequent to origination but is not credit impaired, it is considered to be in Stage 2. This requires the computation of ECL based on lifetime PD that represents the probability of default occurring over the remaining estimated life of the financial asset. Provisions are higher in this stage because of an increase in risk and the impact of a longer time horizon being considered compared to 12 months in Stage 1.

*Stage 3* – Financial assets that have an objective evidence of impairment will be included in this stage. Similar to Stage 2, the allowance for credit losses will continue to capture the lifetime expected credit losses.

Some of the key concepts in IFRS 9 that have the most significant impact and require a high level of judgement are:

### *Assessment of Significant Increase in Credit Risk*

The assessment of a significant increase in credit risk is done on a relative basis. To assess whether the credit risk on a financial asset has increased significantly since origination, the Bank compares the risk of default occurring over the expected life of the financial asset at the reporting date to the corresponding risk of default at origination, using key risk indicators that are used in the Bank's existing risk management processes. At each reporting date, the assessment of a change in credit risk will be individually assessed for those considered individually significant and at the segment level for retail exposures. This assessment is symmetrical in nature, allowing credit risk of financial assets to move back to Stage 1 if the increase in credit risk since origination has reduced and is no longer deemed to be significant.

### *Macroeconomic Factors, Forward Looking Information (FLI) and Multiple Scenarios*

IFRS 9 requires an unbiased and probability weighted estimate of credit losses by evaluating a range of possible outcomes that incorporates forecasts of future economic conditions.

Macroeconomic factors and FLI are required to be incorporated into the measurement of ECL as well as the determination of whether there has been a significant increase in credit risk since origination. Measurement of ECLs at each reporting period should reflect reasonable and supportable

information at the reporting date about past events, current conditions and forecasts of future economic conditions.

The Bank will use three scenarios that will be probability weighted to determine ECL, leveraging its existing Enterprise Wide Stress Test modeling framework.

#### Experienced credit judgment

The Bank's ECL allowance methodology, in line with OSFI guidelines, requires the Bank to use its experienced credit judgement to incorporate the estimated impact of factors not captured in the modelled ECL results, in all reporting periods.

#### Expected Life

When measuring ECL, the Bank must consider the maximum contractual period over which the Bank is exposed to credit risk. All contractual terms should be considered when determining the expected life, including prepayment options and extension and rollover options. For certain revolving credit facilities that do not have a fixed maturity, the expected life is estimated based on the period over which the Bank is exposed to credit risk and where the credit losses would not be mitigated by management actions.

#### Definition of Default and Write-off

The Bank has modified its definition of impaired financial instruments (Stage 3) for certain categories of financial instruments to make it consistent with the definitions used in the calculation of regulatory capital. The Bank does not expect to rebut the presumption in IFRS 9 that loans which are 90 days past due are in default for retail loans, with the exception of credit cards receivables that are treated as defaulted when 180 days past due. The policy on the write-off of loans remains unchanged.

The main adjustments to the regulatory capital risk components are summarized in the following chart:

	Regulatory capital	IFRS 9
PD	Through the cycle (represents long-run average PD throughout a full economic cycle)  12 month PD is used.	Point in time (based on current conditions, adjusted to take into account estimates of future conditions that will impact PD).  12 month PD for Stage 1 ECL and Lifetime PD for Stage 2 and Stage 3 ECL.
LGD	Downturn LGD based on losses that would be expected in an economic downturn and subject to certain regulatory floors. Both direct and indirect collection costs are considered.	Expected LGD based on historical charge-off events and recovery payments, current information about attributes specific to borrower, and direct costs. Forward-looking macroeconomic variables and expected cash flows from credit enhancements will be incorporated as appropriate and excludes floors and undue conservatism.
EAD	Based on the drawn balance plus expected utilization of any undrawn portion prior to default, and cannot be lower than the drawn balance.	EAD represents the expected balance at default over the lifetime and is conditional on forward looking expectations.
Discounting factors	Not applicable	Expected credit losses are discounted from default date to the reporting date

*Certain allowances for credit losses currently ascribed to impaired loans will be ascribed against Stage 1 and Stage 2 exposures.*

#### Transition impact

The Bank will record an adjustment to its opening November 1, 2017 retained earnings and AOCI, to reflect the application of the new requirements of *Impairment* and *Classification and Measurement* at the adoption date and will not restate comparative periods.

The Bank estimates the IFRS 9 transition amount will reduce shareholders' equity by approximately \$600 million after-tax and the Common Equity Tier 1 capital ratio by approximately 15 basis points as at November 1, 2017. The estimated impact relates primarily to the implementation of the ECL requirements. The Bank continues to revise, refine and validate the impairment models and related process controls leading up to the January 31, 2018 reporting.

#### Effective November 1, 2018

##### Revenue from contracts with customers

On May 28, 2014, the IASB issued IFRS 15 *Revenue from Contracts with Customers*, 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 to recognize revenue as performance obligations in a contract are satisfied. The standard scopes out contracts that are considered to be lease contracts, insurance contracts and financial instruments, and as such will impact the businesses that earn fee and commission revenue.

On April 12, 2016, the IASB issued amendments to IFRS 15 *Revenue from Contracts with Customers*. The amendments provide additional clarification on the identification of a performance obligation in a contract, determining the principal and agent in an agreement, and determining whether licensing revenues should be recognized at a point in time or over a specific period. The amendments also provide additional practical expedients that can be used on transition to the standard.

The Bank will adopt the standard and its amendments as of November 1, 2018 and plans to use 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 balances of retained earnings as of November 1, 2018, without restating comparative periods. Additional disclosures will be required in order to explain any significant changes between reported results and results had the previous revenue standard been applied.

The standard does not apply to revenue associated with financial instruments, and therefore, will not impact the majority of the Bank's revenue, including interest income, interest expense, trading revenue and securities gains which are covered under IFRS 9 *Financial Instruments*. The implementation of the standard is being led by the Finance Department in coordination with the business segments. The areas of focus for the Bank's assessment of impact are fees and commission revenues from wealth management and banking services in Canadian and International Banking. The Bank has been working to identify and review the customer contracts within the scope of the new standard. While the assessment is not complete, the timing of the Bank's revenue recognition of fees and commissions within the scope of this standard is not expected to materially change. The classification of certain contract costs (whether presented gross or offset against non-interest income) continues to be evaluated and the final interpretation may impact the presentation of certain contract costs. The Bank is also evaluating the additional disclosures that may be relevant and required.

#### 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, with early adoption permitted from the date the Bank applies IFRS 15 *Revenue from Contracts with Customers* on or before the date of initial application of IFRS 16. 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 assessing the impact of this new standard.

#### 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. The standard is effective for the Bank on November 1, 2021. The Bank will assess the impact of adopting this new standard.

### Regulatory Developments

The Bank continues to monitor and respond to global regulatory developments relating to a broad spectrum of topics, including Basel III capital and liquidity requirements, over-the-counter derivatives reform, consumer protection measures and cybersecurity, in order to ensure that control and business units are responsive on a timely basis and business impacts, if any, are minimized.

#### Bank Recapitalization Regime – Proposed Bail-in Regulations

On June 22, 2016, legislation came into force amending the Bank Act (Canada) (the "Bank Act") and the Canada Deposit Insurance Corporation Act (Canada) (the "CDIC Act") and certain other federal statutes pertaining to banks to create a bail-in regime for Canada's domestically systemically important banks (D-SIBs), which include the Bank. On June 17, 2017, the Government of Canada published in draft for public comment regulations under the CDIC Act and the Bank Act providing the final details of the conversion, issuance and compensation regimes for bail-in instruments issued by domestic systemically important banks, including the Bank (collectively, the "Bail-In Regulations"). Pursuant to the CDIC Act, in circumstances where OSFI has determined that the Bank has ceased, or is about to cease, to be viable, the Governor in Council may, upon a recommendation of the Minister of Finance that he or she is of the opinion that it is in the public interest to do so, grant an order directing CDIC to convert all or a portion of certain shares and liabilities of the Bank into common shares of the Bank (a "Bail-In Conversion").

The Bail-In Regulations prescribe the types of shares and liabilities that will be subject to a Bail-In Conversion. In general, any senior debt with an initial or amended term to maturity (including certain explicit or embedded options) greater than 400 days, that is unsecured or partially secured and has been assigned a CUSIP or ISIN or similar identification number would be subject to a Bail-In Conversion. Shares, other than common shares, and subordinated debt would also be subject to a Bail-In Conversion, unless they are non-viability contingent capital. The Bail-In Regulations become effective 180 days after the regulations are registered. These changes are not expected to have a material impact on the Bank's cost of long-term unsecured funding.

In conjunction with the pre-publication of the Bail-In Regulations, OSFI issued draft guidelines on Total Loss Absorbing Capacity (TLAC), which will apply to Canada's D-SIBs as part of the Federal Government's bail-in regime. The standards are intended to address the sufficiency of a systemically important bank's loss absorbing capacity in supporting its recapitalization in the event of its failure. TLAC is defined as the aggregate of Tier 1 capital, Tier 2 capital, and other TLAC instruments, which allow conversion in whole or in part into common shares under the CDIC Act and



meet all of the eligibility criteria under the guideline. The minimum TLAC requirements are proposed to be effective November 2021. The Bank does not anticipate any challenges in meeting the proposed TLAC requirements.

### Over-The-Counter Derivatives Reform

Capital requirements for derivatives dealers are currently being considered by international regulators, while margin requirements for non-centrally cleared derivatives have already been adopted in a number of jurisdictions, including Canada, Europe, the United States, Hong Kong and Singapore. In March 2015, the Basel Committee on Banking Supervision and the International Organization of Securities Commissions (IOSCO) published a framework establishing minimum standards for margin requirements for non-centrally cleared derivatives for financial firms and systemically important non-financial entities ("BCBS Framework"). On February 29, 2016, the Office of the Superintendent of Financial Institutions ("OSFI") issued the final version of Guideline E-22 to implement the BCBS Framework for federally regulated financial institutions. The Guideline became effective on September 1, 2016 with compliance to be phased in over the next ensuing years in accordance with the BCBS Framework. These margin rules will, once fully implemented, require the exchange of variation margin and initial margin, both of which are designed to secure the performance of non-centrally cleared derivatives transactions between covered entities. The Bank became subject to variation margin rules beginning March 1, 2017, while initial margin rules will become effective no earlier than September 1, 2018 and no later than September 1, 2019. In February 2017, various regulatory authorities including the Board of Governors of the Federal Reserve System, the CFTC, the European Supervisory Authorities and OSFI issued guidance concerning the implementation of their variation margin rules, affirming the importance of timely effectiveness while recognizing the operational challenges of achieving market-wide participation, especially with respect to smaller counterparty relationships. On April 4, 2017, the CSA published proposed National Instrument 93-101: Derivatives: Business Conduct Rules. The proposed rules impose a business conduct standard on derivatives dealers and derivatives advisers when transacting in OTC derivatives with derivatives parties. The Bank is continuing with its efforts to meet all obligations imposed by the variation margin rules in accordance with the guidance received from OSFI and other relevant supervisory authorities, while a project has been initiated to prepare for the upcoming implementation of the initial margin rules.

### Automatic Exchange of Information – Organisation for Economic Co-operation and Development (OECD)

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

### United Kingdom and European Regulatory Reform

On June 23, 2016, the United Kingdom (UK) held a referendum to decide on its membership in the European Union. The resulting vote was to leave the European Union. A formal notice of the UK Government's intention to withdraw was provided to the European Council on March 29, 2017, triggering a two-year negotiation period during which the terms of the UK's exit will be determined. Until those negotiations are concluded or the negotiation period expires, the UK will remain an EU Member State, subject to all EU legislation. There are a number of uncertainties in connection with the future of the UK and its relationship with the European Union. Until the terms and timing of the UK's exit from the European Union are clearer, it is difficult to determine the potential longer term impact on the Bank. The UK's exit from the European Union may result in significant changes in law, which may impact the Bank's business, financial condition and results of operations and could adversely impact the Bank's cost of funding in Europe. The Bank continually monitors developments to prepare for changes that have the potential to impact its operations in the UK and elsewhere in Europe.

The Markets in Financial Instruments Directive II/Regulation (MiFID II/MiFIR) becomes effective January 2018 and will have a significant technological and procedural impact on certain of our businesses operating in the European Union, as well as certain businesses operating outside of the EU but which are subject to MiFID II/MiFIR. The new requirements contained within MiFID II/MiFIR will result in changes to pre- and post-trade transparency, market structure, transaction reporting, algorithmic trading, research and business conduct rules. Unlike the current MiFID regime, which applies primarily to equities, MiFID II/MiFIR will also extend to fixed income and "equity-like" products.

### Cybersecurity and privacy developments in Europe and the U.S.

The E.U. General Data Protection Regulation ("GDPR") will apply from May 25, 2018. The GDPR replaces the current E.U. Data Protection Directive and is designed to harmonize data privacy laws across Europe. The GDPR changes data governance and protection requirements as well as disclosure requirements in respect of data breaches. The GDPR applies to organizations based outside of the European Union if they collect or process data of E.U. residents. The Bank continues to assess the impact of the GDPR and is taking steps to align privacy and data protection practices to comply with the new requirements.

The New York Department of Financial Services (NY DFS) cybersecurity requirements took effect on March 1, 2017. Entities subject to NY DFS requirements must maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of its information systems. Subject to various phase-in dates over the next couple of years, each covered entity must meet various compliance requirements, including: conducting periodic risk assessments; implementing policies and procedures; and monitoring and testing, among others. The Bank of Nova Scotia, New York Agency, is subject to NY DFS requirements. By February 15, 2018, and annually thereafter, applicable entities must certify compliance with the requirements. The Bank is in compliance with existing NY DFS cybersecurity requirements and expects to comply with additional NYS DFS requirements by the applicable compliance dates.

### Basel Committee on Banking Supervision

In March 2017, the Basel Committee on Banking Supervision (BCBS) issued the *Pillar 3 disclosure requirements – consolidated and enhanced framework* which builds on the revisions to the Pillar 3 disclosure published by the Committee in January 2015.

In March 2017, the BCBS also released its standard on the interim approach and transitional arrangements for the regulatory treatment of accounting provisions. In the standard, the BCBS clarified that it will retain its current treatment of provisions under both Standardized Approach and Advanced Internal Ratings Based frameworks during an interim period. Further, the BCBS allows local jurisdictions the option to choose whether to apply a transitional arrangement for the impact of IFRS 9 on regulatory capital. OSFI has not publicly issued its final guidance for the Canadian banks which will take effect from January 1, 2018. The Bank will assess the impact once OSFI's guidance is issued.

In April 2017, OSFI issued a guideline indicating that all domestic systemically important banks are expected to implement the *Revised Pillar 3 disclosure requirements* for the reporting period ending October 31, 2018. We are awaiting OSFI's guideline on the implementation of the *Pillar 3 disclosure requirements – consolidated and enhanced framework*.

#### Regulatory developments relating to liquidity

The Net Stable Funding Ratio (NSFR) is expected to become a minimum standard in OSFI's liquidity framework. The NSFR is aimed at reducing structural funding risk by requiring banks to fund their activities with sufficiently stable sources of funding. OSFI has extended the implementation timeline of the NSFR to January 2019.

### Related Party Transactions

#### Compensation of key management personnel

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

#### T55 Compensation of the Bank key management personnel

For the year ended October 31 (\$ millions)	2017	2016
Salaries and cash incentives <sup>(1)</sup>	\$ 17	\$ 20
Equity-based payment <sup>(2)</sup>	25	24
Pension and other benefits <sup>(1)</sup>	3	3
<b>Total</b>	<b>\$ 45</b>	<b>\$ 47</b>

(1) Expensed during the year.

(2) Awarded during the year.

Directors can use some or all of their director fees earned to buy common shares of the Bank at market rates through the Director's Share Purchase Plan. Non-officer directors may elect to receive all or a portion of their fees in the form of deferred stock units which vest immediately. Refer to Note 25 – Share-based payments for further details of these plans.

#### T56 Loans and deposits of key management personnel

Loans are currently granted to key management personnel at market terms and conditions.

As at October 31 (\$ millions)	2017	2016
Loans	\$ 6	\$ 6
Deposits	\$ 8	\$ 11

The Bank's committed credit exposure to companies controlled by directors totaled \$145.2 million as at October 31, 2017 (October 31, 2016 – \$99.5 million) while actual utilized accounts were \$11.5 million (October 31, 2016 – \$3.9 million).

#### Transactions with associates and joint ventures

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

#### T57 Transactions with associates and joint ventures

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

#### Scotiabank principal pension plan

The Bank manages assets of \$3.0 billion (October 31, 2016 – \$1.9 billion) which is a portion of the Scotiabank principal pension plan assets and earned \$3.7 million (October 31, 2016 – \$3.9 million) in fees.

#### Oversight and governance

The oversight responsibilities of the Audit Committee (AC) with respect to related party transactions include reviewing policies and practices for identifying transactions with related parties that may materially affect the Bank, and reviewing the procedures for ensuring compliance with the Bank Act for related party transactions. The Bank Act requirements encompass a broader definition of related party transactions than is set out in IFRS. The Bank has various procedures in place to ensure that related party information is identified and reported to the AC on a semi-annual basis. The AC is provided with detailed reports that reflect the Bank's compliance with its established procedures.

The Bank's Internal Audit department carries out audit procedures as necessary to provide the AC with reasonable assurance that the Bank's policies and procedures to identify, authorize and report related party transactions are appropriately designed and operating effectively.

## SUPPLEMENTARY DATA

### Geographic Information

**T58** Net income by geographic segment

For the fiscal years (\$ millions)	2017								2016								2015							
	Canada	U.S.	Mexico	Peru	Chile	Colombia	Other Inter- national	Total	Canada	U.S.	Mexico	Peru	Chile	Colombia	Other Inter- national	Total	Canada	U.S.	Mexico	Peru	Chile	Colombia	Other Inter- national	Total
Net interest income	\$7,440	\$460	\$1,380	\$1,287	\$817	\$710	\$2,999	\$15,093	\$7,022	\$479	\$1,224	\$1,231	\$763	\$674	\$2,950	\$14,343	\$6,458	\$472	\$1,246	\$1,077	\$554	\$677	\$2,631	\$13,115
Non-interest income	6,924	830	536	635	409	455	2,502	12,291	6,893	871	554	600	325	419	2,409	12,071	6,272	882	561	601	231	372	2,163	11,082
Provision for credit losses	906	(14)	193	329	145	337	353	2,249	876	112	225	315	113	320	401	2,362	728	6	260	266	108	246	268	1,882
Non-interest expenses	7,650	606	1,123	762	630	620	3,069	14,460	7,339	633	1,121	740	605	550	3,036	14,024	6,936	507	1,160	744	431	541	2,745	13,064
Income tax expense	1,066	147	125	225	77	71	506	2,217	1,235	155	69	201	45	89	497	2,291	1,038	267	27	195	24	84	401	2,036
<b>Total</b>	<b>\$4,742</b>	<b>\$551</b>	<b>\$ 475</b>	<b>\$ 606</b>	<b>\$374</b>	<b>\$137</b>	<b>\$1,573</b>	<b>\$ 8,458</b>	<b>\$4,465</b>	<b>\$450</b>	<b>\$ 363</b>	<b>\$ 575</b>	<b>\$325</b>	<b>\$134</b>	<b>\$1,425</b>	<b>\$ 7,737</b>	<b>\$4,028</b>	<b>\$574</b>	<b>\$ 360</b>	<b>\$ 473</b>	<b>\$222</b>	<b>\$178</b>	<b>\$1,380</b>	<b>\$ 7,215</b>
Corporate adjustments							(215)								(369)								(2)	
<b>Net Income</b>							<b>\$ 8,243</b>								<b>\$ 7,368</b>								<b>\$ 7,213</b>	

**T59** Loans and acceptances by geography <sup>(1)</sup>

As at October 31 (\$ billions)	2017	2016	2015	Percentage mix	
				2017	2015
<b>Canada</b>					
Atlantic provinces	\$ 22.7	\$ 26.7	\$ 25.6	4.3%	5.4%
Quebec	29.0	29.7	28.5	5.5	6.0
Ontario	173.6	156.7	150.7	33.3	31.9
Manitoba and Saskatchewan	17.1	17.0	16.5	3.3	3.5
Alberta	51.9	50.8	49.6	9.9	10.5
British Columbia	55.6	47.6	44.5	10.7	9.4
	<b>349.9</b>	328.5	315.4	<b>67.0</b>	66.7
<b>U.S.</b>	<b>36.9</b>	38.5	30.2	<b>7.1</b>	6.4
<b>Mexico</b>	<b>24.2</b>	20.8	18.6	<b>4.6</b>	3.9
<b>Peru</b>	<b>18.4</b>	17.8	17.0	<b>3.5</b>	3.6
<b>Chile</b>	<b>22.8</b>	19.4	16.4	<b>4.4</b>	3.5
<b>Colombia</b>	<b>9.4</b>	9.3	8.7	<b>1.8</b>	1.8
<b>Other International</b>					
Latin America	6.6	6.4	6.7	1.3%	1.4%
Europe	10.0	8.4	9.3	1.9	2.0
Caribbean and Central America	31.4	32.6	31.8	6.0	6.7
Asia and Other	12.6	15.0	19.0	2.4	4.0
	<b>60.6</b>	62.4	66.8	<b>11.6</b>	14.1
	<b>\$ 522.2</b>	\$ 496.7	\$ 473.1	<b>100.0%</b>	100.0%
Total allowance for loan losses <sup>(2)</sup>	<b>(4.3)</b>	(4.6)	(4.2)		
<b>Total loans and acceptances net of allowance for loan losses</b>	<b>\$ 517.9</b>	\$ 492.1	\$ 468.9		

(1) Prior periods have been restated to reflect the current period presentation.

(2) Total allowance includes a collective allowance on performing loans of \$1,446 million in 2017 and \$1,444 million in 2016. The increase reflects a \$2 million reallocation from reserves against unfunded commitments and other off-balance sheet items.

**T60** Gross impaired loans by geographic segment

As at October 31 (\$ millions)	2017 <sup>(1)</sup>	2016 <sup>(1)</sup>	2015 <sup>(1)</sup>
Canada	\$ 1,049	\$ 1,258	\$ 1,189
U.S.	140	210	11
Mexico	303	301	271
Peru	704	764	603
Chile	565	499	405
Colombia	462	381	356
Other International	1,642	1,981	1,823
<b>Total</b>	<b>\$ 4,865</b>	<b>\$ 5,394</b>	<b>\$ 4,658</b>

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

**T61** Provision against impaired loans by geographic segment

For the fiscal years (\$ millions)	2017	2016	2015
Canada	\$ 906	\$ 876	\$ 727
U.S.	(14)	112	6
Mexico	193	224	260
Peru	329	317	265
Chile	145	112	108
Colombia	337	320	247
Other International	353	401	269
<b>Total</b>	<b>\$2,249</b>	<b>\$2,362</b>	<b>\$1,882</b>

**T62** Cross-border exposure to select countries<sup>(1)</sup>

As at October 31 (\$ millions)	Loans	Trade	Interbank deposits	Government and other securities	Investment in subsidiaries and affiliates	Other	2017 Total	2016 Total
<b>Asia</b>								
China	\$ 1,683	\$ 1,186	\$ 596	\$ 99	\$ 747	\$ 56	\$ 4,367	\$ 5,205
India	2,185	57	–	–	–	12	2,254	1,893
Thailand	149	6	516	–	2,789	1	3,461	3,249
South Korea	901	58	–	–	–	9	968	1,564
Hong Kong	1,250	72	124	–	–	19	1,465	1,736
Malaysia	275	–	–	–	303	4	582	1,108
Japan	477	35	179	4,317	–	6	5,014	1,756
Others <sup>(2)</sup>	1,052	180	118	–	–	21	1,371	1,673
<b>Total</b>	<b>\$ 7,972</b>	<b>\$ 1,594</b>	<b>\$ 1,533</b>	<b>\$ 4,416</b>	<b>\$ 3,839</b>	<b>\$ 128</b>	<b>\$ 19,482</b>	<b>\$ 18,184</b>
<b>Latin America</b>								
Chile	\$ 3,075	\$ 959	\$ 628	\$ 191	\$ 3,452	\$ 40	\$ 8,345	\$ 6,314
Mexico	2,945	187	–	141	3,544	84	6,901	6,464
Brazil	3,540	1,022	–	15	223	517	5,317	5,198
Peru	2,264	73	–	199	4,518	26	7,080	6,760
Colombia	1,308	226	–	10	1,431	7	2,982	2,940
Others <sup>(3)</sup>	115	12	–	–	551	–	678	632
<b>Total</b>	<b>\$ 13,247</b>	<b>\$ 2,479</b>	<b>\$ 628</b>	<b>\$ 556</b>	<b>\$ 13,719</b>	<b>\$ 674</b>	<b>\$ 31,303</b>	<b>\$ 28,308</b>
<b>Caribbean and Central America</b>								
Panama	\$ 3,907	\$ 99	\$ 35	\$ –	\$ 288	\$ –	\$ 4,329	\$ 4,495
Costa Rica	1,272	184	–	–	1,084	–	2,540	2,767
El Salvador	579	32	–	–	659	–	1,270	1,460
Dominican Republic	1,151	55	16	–	–	–	1,222	1,113
Jamaica	18	1	–	–	766	–	785	743
Others <sup>(4)</sup>	1,508	115	1	–	406	–	2,030	2,183
<b>Total</b>	<b>\$ 8,435</b>	<b>\$ 486</b>	<b>\$ 52</b>	<b>\$ –</b>	<b>\$ 3,203</b>	<b>\$ –</b>	<b>\$ 12,176</b>	<b>\$ 12,761</b>
<b>As at October 31, 2017</b>	<b>\$ 29,654</b>	<b>\$ 4,559</b>	<b>\$ 2,213</b>	<b>\$ 4,972</b>	<b>\$ 20,761</b>	<b>\$ 802</b>	<b>\$ 62,961</b>	
<b>As at October 31, 2016</b>	<b>\$ 30,589</b>	<b>\$ 4,150</b>	<b>\$ 1,293</b>	<b>\$ 2,179</b>	<b>\$ 19,655</b>	<b>\$ 1,387</b>	<b>\$ 59,253</b>	

(1) Cross-border exposure represents a claim, denominated in a currency other than the local one, against a borrower in a foreign country on the basis of ultimate risk.

(2) Includes Indonesia, Macau, Singapore, Vietnam, Taiwan and Turkey.

(3) Includes Venezuela and Uruguay.

(4) Includes other English and Spanish Caribbean countries, such as Bahamas, Barbados, British Virgin Islands, Trinidad & Tobago, Turks & Caicos.

## Credit Risk

## T63 Loans and acceptances by type of borrower

As at October 31 (\$ billions)	2017		2016	2015
	Balance	% of total		
Residential mortgages	\$ 236.9	45.3%	\$ 222.9	\$ 217.5
Personal loans and credit cards	103.3	19.8	99.5	91.5
<b>Personal</b>	<b>\$ 340.2</b>	<b>65.1%</b>	<b>\$ 322.4</b>	<b>\$ 309.0</b>
Financial services				
Non-bank	\$ 20.5	3.9%	\$ 16.1	\$ 14.3
Bank <sup>(1)</sup>	3.8	0.7	3.7	6.7
Wholesale and retail	21.1	4.0	22.1	21.5
Real estate and construction	24.6	4.7	22.6	19.5
Energy	15.5	3.0	15.6	16.5
Transportation	8.2	1.6	9.0	9.1
Automotive	13.0	2.5	11.5	10.4
Agriculture	10.2	2.0	8.8	8.1
Hospitality and leisure	3.5	0.7	3.5	3.6
Mining	4.9	0.9	5.4	4.5
Metals refinery and processing	2.6	0.5	2.5	2.8
Utilities	8.1	1.6	7.8	5.8
Health care	5.6	1.1	5.2	5.0
Technology and media	9.6	1.8	11.8	9.1
Chemical	1.1	0.2	1.6	2.0
Food and beverage	6.3	1.2	4.9	4.9
Forest products	1.7	0.3	2.5	1.7
Other <sup>(2)</sup>	17.0	3.3	14.7	13.6
Sovereign <sup>(3)</sup>	4.7	0.9	5.0	5.0
<b>Business and government</b>	<b>\$ 182.0</b>	<b>34.9%</b>	<b>\$ 174.3</b>	<b>\$ 164.1</b>
	<b>\$ 522.2</b>	<b>100.0%</b>	<b>\$ 496.7</b>	<b>\$ 473.1</b>
Total allowance for loan losses	(4.3)		(4.6)	(4.2)
<b>Total loans and acceptances net of allowance for loan losses</b>	<b>\$ 517.9</b>		<b>\$ 492.1</b>	<b>\$ 468.9</b>

(1) Deposit taking institutions and securities firms.

(2) Other related to \$3.5 in financing products, \$2.2 in services and \$2.3 in wealth management (2016 – \$3.2, \$2.4, and \$2.0 respectively).

(3) Includes central banks, regional and local governments, and supra-national agencies.

## T64 Off-balance sheet credit instruments

As at October 31 (\$ billions)	2017	2016	2015
Commitments to extend credit <sup>(1)</sup>	\$ 185.7	\$ 174.2	\$ 166.4
Standby letters of credit and letters of guarantee	35.5	34.5	30.9
Securities lending, securities purchase commitments and other	42.0	40.0	42.8
<b>Total</b>	<b>\$ 263.2</b>	<b>\$ 248.7</b>	<b>\$ 240.1</b>

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

**T65** Changes in net impaired loans<sup>(1)</sup>

For the fiscal years (\$ millions)	2017	2016	2015
<b>Gross impaired loans</b>			
Balance at beginning of year	\$ 5,394	\$ 4,658	\$ 4,200
Net additions			
New additions	4,297	4,684	3,763
Declassifications	(42)	(24)	(13)
Payments	(1,427)	(1,344)	(1,254)
Sales	(50)	(95)	(11)
	2,778	3,221	2,485
Write-offs			
Residential mortgages	(170)	(201)	(109)
Personal loans	(1,478)	(1,279)	(1,310)
Credit cards	(1,024)	(671)	(490)
Business and government	(501)	(428)	(319)
	(3,173)	(2,579)	(2,228)
Foreign exchange and other	(134)	94	201
Balance at end of year	\$ 4,865	\$ 5,394	\$ 4,658
<b>Allowance for credit losses on impaired loans</b>			
Balance at beginning of year	\$ 2,948	\$ 2,573	\$ 2,198
Provision for credit losses	2,249	2,362	1,916
Write-offs	(3,173)	(2,579)	(2,228)
Recoveries			
Residential mortgages	70	20	35
Personal loans	252	305	260
Credit cards	303	217	82
Business and government	55	40	52
	680	582	429
Foreign exchange and other	(82)	10	258
Balance at end of year	\$ 2,622	\$ 2,948	\$ 2,573
<b>Net impaired loans</b>			
Balance at beginning of year	\$ 2,446	\$ 2,085	\$ 2,002
Net change in gross impaired loans	(529)	736	458
Net change in allowance for credit losses on impaired loans	326	(375)	(375)
Balance at end of year	\$ 2,243	\$ 2,446	\$ 2,085

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

**T66** Provision for credit losses

For the fiscal years (\$ millions)	2017	2016	2015
Gross provisions	\$ 3,057	\$ 3,072	\$ 2,435
Reversals	(128)	(110)	(68)
Recoveries	(680)	(600)	(485)
Net provisions for credit losses on impaired loans	2,249	2,362	1,882
Collective provision (reversals) on performing loans	-	50	60
<b>Total net provisions for credit losses</b>	\$ 2,249	\$ 2,412	\$ 1,942

**T67** Provision for credit losses against impaired loans by type of borrower

For the fiscal years (\$ millions)	2017	2016	2015
Residential mortgages	\$ 61	\$ 100	\$ 118
Personal loans and credit cards	1,886	1,677	1,526
<b>Personal</b>	<b>\$ 1,947</b>	<b>\$ 1,777</b>	<b>\$ 1,644</b>
Financial services			
Non-bank	10	(1)	(1)
Bank	1	2	(1)
Wholesale and retail	63	61	62
Real estate and construction	62	34	30
Energy	(8)	290	48
Transportation	20	45	23
Automotive	8	28	9
Agriculture	14	14	12
Hospitality and leisure	14	25	1
Mining	2	6	7
Metals refinery and processing	46	11	4
Utilities	12	20	–
Health care	7	9	9
Technology and media	(1)	14	4
Chemical	(1)	(7)	4
Food and beverage	18	6	16
Forest products	3	1	4
Other	31	23	6
Sovereign	1	4	1
<b>Business and government</b>	<b>\$ 302</b>	<b>\$ 585</b>	<b>\$ 238</b>
<b>Total provisions against impaired loans</b>	<b>\$ 2,249</b>	<b>\$ 2,362</b>	<b>\$ 1,882</b>

**T68** Impaired loans by type of borrower

As at October 31 (\$ millions)	2017 <sup>(1)</sup>			2016 <sup>(1)</sup>		
	Gross	Allowance for credit losses	Net	Gross	Allowance for credit losses	Net
Residential mortgages	\$ 1,445	\$ 326	\$ 1,119	\$ 1,608	\$ 458	\$ 1,150
Personal loans and credit cards	1,610	1,583	27	1,622	1,596	26
<b>Personal</b>	<b>\$ 3,055</b>	<b>\$ 1,909</b>	<b>\$ 1,146</b>	<b>\$ 3,230</b>	<b>\$ 2,054</b>	<b>\$ 1,176</b>
Financial services						
Non-bank	31	20	11	23	8	15
Bank	2	2	–	2	2	–
Wholesale and retail	242	132	110	290	193	97
Real estate and construction	257	115	142	234	105	129
Energy	265	77	188	324	89	235
Transportation	181	73	108	214	84	130
Automotive	20	7	13	70	38	32
Agriculture	55	30	25	75	37	38
Hospitality and leisure	41	7	34	83	27	56
Mining	11	5	6	14	6	8
Metals refinery and processing	107	27	80	159	25	134
Utilities	280	61	219	252	53	199
Health care	52	26	26	49	29	20
Technology and media	7	5	2	32	28	4
Chemical	4	3	1	15	6	9
Food and beverage	95	35	60	110	44	66
Forest products	22	8	14	23	6	17
Other	123	74	49	150	108	42
Sovereign	15	6	9	45	6	39
<b>Business and government</b>	<b>\$ 1,810</b>	<b>\$ 713</b>	<b>\$ 1,097</b>	<b>\$ 2,164</b>	<b>\$ 894</b>	<b>\$ 1,270</b>
<b>Total</b>	<b>\$ 4,865</b>	<b>\$ 2,622</b>	<b>\$ 2,243</b>	<b>\$ 5,394</b>	<b>\$ 2,948</b>	<b>\$ 2,446</b>

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



**T69** Total credit risk exposures by geography<sup>(1)(2)</sup>

As at October 31 (\$ millions)	2017					2016
	Non-Retail				Retail	Total
	Drawn	Undrawn	Other exposures <sup>(3)</sup>	Total		
Canada	\$ 95,801	\$ 37,900	\$ 40,926	\$ 327,597	\$ 502,224	\$ 468,923
U.S.	88,623	31,008	37,755	–	157,386	143,808
Mexico	17,389	1,152	2,535	9,452	30,528	26,873
Peru	15,873	1,551	3,415	7,894	28,733	28,328
Chile	12,004	754	1,756	12,676	27,190	23,510
Colombia	4,782	150	337	5,590	10,859	10,943
Other International						
Europe	25,216	6,586	11,228	–	43,030	41,525
Caribbean and Central America	18,554	1,554	1,299	17,951	39,358	41,168
Latin America (other)	7,489	542	299	705	9,035	8,908
Other	23,551	3,696	2,823	–	30,070	30,929
<b>Total</b>	<b>\$ 309,282</b>	<b>\$ 84,893</b>	<b>\$ 102,373</b>	<b>\$ 381,865</b>	<b>\$ 878,413</b>	<b>\$ 824,915</b>
As at October 31, 2016	\$ 290,566	\$ 76,745	\$ 102,061	\$ 355,543	\$ 824,915	

(1) Geographic segmentation is based upon the location of the ultimate risk of the credit exposure. Includes all credit risk portfolios and excludes available-for-sale equities and other assets.

(2) Amounts represent exposure at default.

(3) Includes off-balance sheet lending instruments such as letters of credit, letters of guarantee, derivatives, securitization and repo-style transactions after collateral.

**T70** AIRB credit risk exposures by maturity<sup>(1)(2)</sup>

Residual maturity as at October 31 (\$ millions)	2017				2016
	Drawn	Undrawn	Other exposures <sup>(3)</sup>	Total	Total
<b>Non-retail</b>					
Less than 1 year	\$ 134,454	\$ 23,128	\$ 55,542	\$ 213,124	\$ 195,369
One to 5 years	105,995	54,653	31,439	192,087	188,751
Over 5 years	9,596	1,561	12,060	23,217	18,880
<b>Total non-retail</b>	<b>\$ 250,045</b>	<b>\$ 79,342</b>	<b>\$ 99,041</b>	<b>\$ 428,428</b>	<b>\$ 403,000</b>
<b>Retail</b>					
Less than 1 year	\$ 34,389	\$ 16,656	\$ –	\$ 51,045	\$ 44,215
One to 5 years	178,940	–	–	178,940	167,999
Over 5 years	16,299	–	–	16,299	20,243
Revolving credits <sup>(4)</sup>	38,582	27,445	–	66,027	58,285
<b>Total retail</b>	<b>\$ 268,210</b>	<b>\$ 44,101</b>	<b>\$ –</b>	<b>\$ 312,311</b>	<b>\$ 290,742</b>
<b>Total</b>	<b>\$ 518,255</b>	<b>\$ 123,443</b>	<b>\$ 99,041</b>	<b>\$ 740,739</b>	<b>\$ 693,742</b>
As at October 31, 2016	\$ 487,326	\$ 107,470	\$ 98,946	\$ 693,742	

(1) Remaining term to maturity of the credit exposure. Includes all credit risk portfolios and excludes available-for-sale equities and other assets.

(2) Exposure at default, before credit risk mitigation.

(3) Off-balance sheet lending instruments, such as letters of credit, letters of guarantee, securitization, derivatives and repo-style transactions after collateral.

(4) Credit cards and lines of credit with unspecified maturity.

**T71** Total credit risk exposures and risk-weighted assets

As at October 31 (\$ millions)	2017						2016	
	AIRB		Standardized <sup>(1)</sup>		Total		Total	
	Exposure at Default <sup>(2)</sup>	CET1 risk-weighted assets <sup>(3)</sup>	Exposure at Default <sup>(2)</sup>	CET1 risk-weighted assets <sup>(3)</sup>	Exposure at Default <sup>(2)</sup>	CET1 risk-weighted assets <sup>(3)</sup>	Exposure at Default <sup>(2)</sup>	CET1 risk-weighted assets <sup>(3)</sup>
<b>Non-retail</b>								
<b>Corporate</b>								
Drawn	\$ 132,648	\$ 66,098	\$ 50,614	\$ 48,524	\$ 183,262	\$ 114,622	\$ 175,784	\$ 117,178
Undrawn	75,962	29,324	5,252	5,149	81,214	34,473	73,711	34,499
Other <sup>(4)</sup>	40,892	12,224	3,298	3,207	44,190	15,431	39,943	16,356
	<b>249,502</b>	<b>107,646</b>	<b>59,164</b>	<b>56,880</b>	<b>308,666</b>	<b>164,526</b>	<b>289,438</b>	<b>168,033</b>
<b>Bank</b>								
Drawn	19,734	4,070	2,489	2,045	22,223	6,115	26,022	6,567
Undrawn	2,560	383	96	94	2,656	477	1,982	368
Other <sup>(4)</sup>	9,098	1,594	34	29	9,132	1,623	13,175	2,567
	<b>31,392</b>	<b>6,047</b>	<b>2,619</b>	<b>2,168</b>	<b>34,011</b>	<b>8,215</b>	<b>41,179</b>	<b>9,502</b>
<b>Sovereign</b>								
Drawn	97,663	3,524	6,134	1,141	103,797	4,665	88,760	5,161
Undrawn	820	101	203	198	1,023	299	1,052	119
Other <sup>(4)</sup>	977	26	–	–	977	26	497	12
	<b>99,460</b>	<b>3,651</b>	<b>6,337</b>	<b>1,339</b>	<b>105,797</b>	<b>4,990</b>	<b>90,309</b>	<b>5,292</b>
<b>Total Non-retail</b>								
Drawn	250,045	73,692	59,237	51,710	309,282	125,402	290,566	128,906
Undrawn	79,342	29,808	5,551	5,441	84,893	35,249	76,745	34,986
Other <sup>(4)</sup>	50,967	13,844	3,332	3,236	54,299	17,080	53,615	18,935
	<b>\$ 380,354</b>	<b>\$ 117,344</b>	<b>\$ 68,120</b>	<b>\$ 60,387</b>	<b>\$ 448,474</b>	<b>\$ 177,731</b>	<b>\$ 420,926</b>	<b>\$ 182,827</b>
<b>Retail</b>								
<b>Retail residential mortgages</b>								
Drawn	\$ 200,618	\$ 15,011	\$ 34,002	\$ 15,013	\$ 234,620	\$ 30,024	\$ 220,917	\$ 25,028
	<b>200,618</b>	<b>15,011</b>	<b>34,002</b>	<b>15,013</b>	<b>234,620</b>	<b>30,024</b>	<b>220,917</b>	<b>25,028</b>
<b>Secured lines of credit</b>								
Drawn	20,281	3,351	–	–	20,281	3,351	19,233	4,497
Undrawn	15,356	917	–	–	15,356	917	14,587	1,359
	<b>35,637</b>	<b>4,268</b>	<b>–</b>	<b>–</b>	<b>35,637</b>	<b>4,268</b>	<b>33,820</b>	<b>5,856</b>
<b>Qualifying retail revolving exposures</b>								
Drawn	16,939	9,676	–	–	16,939	9,676	16,717	9,463
Undrawn	27,445	3,291	–	–	27,445	3,291	21,108	2,656
	<b>44,384</b>	<b>12,967</b>	<b>–</b>	<b>–</b>	<b>44,384</b>	<b>12,967</b>	<b>37,825</b>	<b>12,119</b>
<b>Other retail</b>								
Drawn	30,372	14,014	35,552	26,304	65,924	40,318	62,182	38,006
Undrawn	1,300	311	–	–	1,300	311	799	203
	<b>31,672</b>	<b>14,325</b>	<b>35,552</b>	<b>26,304</b>	<b>67,224</b>	<b>40,629</b>	<b>62,981</b>	<b>38,209</b>
<b>Total retail</b>								
Drawn	268,210	42,052	69,554	41,317	337,764	83,369	319,049	76,994
Undrawn	44,101	4,519	–	–	44,101	4,519	36,494	4,218
	<b>\$ 312,311</b>	<b>\$ 46,571</b>	<b>\$ 69,554</b>	<b>\$ 41,317</b>	<b>\$ 381,865</b>	<b>\$ 87,888</b>	<b>\$ 355,543</b>	<b>\$ 81,212</b>
Securitization exposures	23,591	2,529	–	–	23,591	2,529	25,025	2,613
Trading derivatives	24,483	7,147	–	–	24,483	7,147	23,421	6,599
CVA derivatives	–	–	–	2,988	–	2,988	–	4,165
<b>Subtotal</b>	<b>\$ 740,739</b>	<b>\$ 173,591</b>	<b>\$ 137,674</b>	<b>\$ 104,692</b>	<b>\$ 878,413</b>	<b>\$ 278,283</b>	<b>\$ 824,915</b>	<b>\$ 277,416</b>
Equities	1,281	1,188	–	–	1,281	1,188	2,042	2,042
Other assets	–	–	50,631	25,201	50,631	25,201	49,829	24,659
<b>Total credit risk, before scaling factor</b>	<b>\$ 742,020</b>	<b>\$ 174,779</b>	<b>\$ 188,305</b>	<b>\$ 129,893</b>	<b>\$ 930,325</b>	<b>\$ 304,672</b>	<b>\$ 876,786</b>	<b>\$ 304,117</b>
Add-on for 6% scaling factor <sup>(5)</sup>	–	10,487	–	–	–	10,487	–	10,705
<b>Total credit risk</b>	<b>\$ 742,020</b>	<b>\$ 185,266</b>	<b>\$ 188,305</b>	<b>\$ 129,893</b>	<b>\$ 930,325</b>	<b>\$ 315,159</b>	<b>\$ 876,786</b>	<b>\$ 314,822</b>

(1) Net of specific allowances for credit losses.

(2) Outstanding amount for on-balance sheet exposures and loan equivalent amount for off-balance sheet exposures, before credit risk mitigation.

(3) As at October 31, 2017, CVA risk-weighted assets were calculated using scalars of 0.72, 0.77, and 0.81 for the CET1, Tier 1 and Total capital ratios, respectively (scalars of 0.64, 0.71, and 0.77 in 2016).

(4) Other exposures include off-balance sheet lending instruments, such as letters of credit, letters of guarantee, non-trading derivatives and repo-style exposures, after collateral.

(5) Basel Committee imposed a scaling factor (6%) on risk-weighted assets for Internal Ratings-Based credit risk portfolios.

## Revenues and Expenses

### T72 Volume/rate analysis of change in net interest income

(\$ millions)	Increase (decrease) due to change in: 2017 versus 2016			Increase (decrease) due to change in: 2016 versus 2015		
	Average volume	Average rate	Net change	Average volume	Average rate	Net change
<b>Net interest income</b>						
Total earning assets	\$ 785	\$ 1,152	\$ 1,937	\$ 1,859	\$ 13	\$ 1,872
Total interest-bearing liabilities	29	1,165	1,194	515	157	672
Change in net interest income	\$ 756	\$ (13)	\$ 743	\$ 1,344	\$(144)	\$ 1,200
<b>Assets</b>						
Deposits with banks	\$ (85)	\$ 213	\$ 128	\$ (14)	\$ 116	\$ 102
Trading assets	–	(28)	(28)	(7)	(6)	(13)
Securities purchased under resale agreements	(5)	129	124	–	(4)	(4)
Investment securities	109	85	194	407	(79)	328
<b>Loans:</b>						
Residential mortgages	326	(327)	(1)	147	(311)	(164)
Personal loans and credit cards	315	207	522	701	44	745
Business and government	125	873	998	625	253	878
<b>Total loans</b>	<b>766</b>	<b>753</b>	<b>1,519</b>	<b>1,473</b>	<b>(14)</b>	<b>1,459</b>
<b>Total earning assets</b>	<b>\$ 785</b>	<b>\$ 1,152</b>	<b>\$ 1,937</b>	<b>\$ 1,859</b>	<b>\$ 13</b>	<b>\$ 1,872</b>
<b>Liabilities</b>						
<b>Deposits:</b>						
Personal	\$ 106	\$ 156	\$ 262	\$ 174	\$ (95)	\$ 79
Business and government	(101)	937	836	151	359	510
Banks	(7)	82	75	47	79	126
<b>Total deposits</b>	<b>(2)</b>	<b>1,175</b>	<b>1,173</b>	<b>372</b>	<b>343</b>	<b>715</b>
Obligations related to securities sold under repurchase agreements	6	13	19	22	(64)	(42)
Subordinated debentures	(12)	6	(6)	62	(17)	45
Other interest-bearing liabilities	37	(29)	8	59	(105)	(46)
<b>Total interest-bearing liabilities</b>	<b>\$ 29</b>	<b>\$ 1,165</b>	<b>\$ 1,194</b>	<b>\$ 515</b>	<b>\$ 157</b>	<b>\$ 672</b>

### T73 Provision for income taxes

For the fiscal years (\$ millions)	2017	2016	2015	2017 versus 2016
<b>Income taxes</b>				
Income tax expense	\$ 2,033	\$ 2,030	\$ 1,853	–%
<b>Other taxes</b>				
Payroll taxes	380	347	329	10
Business and capital taxes	423	403	361	5
Harmonized sales tax and other	412	363	310	13
Total other taxes	1,215	1,113	1,000	9
Total income and other taxes <sup>(1)</sup>	\$ 3,248	\$ 3,143	\$ 2,853	3%
Net income before income taxes	\$ 10,276	\$ 9,398	\$ 9,066	9%
Effective income tax rate (%)	19.8	21.6	20.4	(1.8)
Total tax rate (%) <sup>(2)</sup>	28.3	29.9	28.3	(1.6)

(1) Comprising \$1,758 of Canadian taxes (2016 – \$1,742; 2015 – \$1,849) and \$1,490 of foreign taxes (2016 – \$1,401; 2015 – \$1,004).

(2) Total income and other taxes as a percentage of net income before income and other taxes.

## MANAGEMENT'S DISCUSSION AND ANALYSIS

**T74** Assets under administration and management

(\$ billions)	2017	2016	2015
<b>Assets under administration</b>			
Personal			
Retail brokerage	\$ 151.7	\$ 163.5	\$ 155.9
Investment management and trust	107.0	106.4	100.2
	258.7	269.9	256.1
Mutual funds	148.3	139.2	130.7
Institutional	63.2	63.7	67.1
<b>Total</b>	<b>\$ 470.2</b>	<b>\$ 472.8</b>	<b>\$ 453.9</b>
<b>Assets under management</b>			
Personal	\$ 51.8	\$ 47.9	\$ 43.0
Mutual funds	134.0	125.1	117.7
Institutional	20.9	19.7	18.3
<b>Total</b>	<b>\$ 206.7</b>	<b>\$ 192.7</b>	<b>\$ 179.0</b>

**T75** Changes in assets under administration and management

As at October 31 (\$ billions)	2017	2016	2015
<b>Assets under administration</b>			
Balance at beginning of year	\$ 472.8	\$ 453.9	\$ 427.5
Net inflows (outflows) <sup>(1)</sup>	(33.6)	4.3	14.3
Impact of market changes, including foreign currency translation	31.0	14.6	12.1
<b>Balance at end of year</b>	<b>\$ 470.2</b>	<b>\$ 472.8</b>	<b>\$ 453.9</b>

(1) Includes impact of business acquisitions/dispositions of \$(33.5) (2016 – nil; 2015 – nil).

As at October 31 (\$ billions)	2017	2016	2015
<b>Assets under management</b>			
Balance at beginning of year	\$ 192.7	\$ 179.0	\$ 164.8
Net inflows (outflows) <sup>(1)</sup>	3.6	6.6	8.2
Impact of market changes, including foreign currency translation	10.4	7.1	6.0
<b>Balance at end of year</b>	<b>\$ 206.7</b>	<b>\$ 192.7</b>	<b>\$ 179.0</b>

(1) Includes impact of business acquisitions/dispositions of \$(4.3) (2016 – nil; 2015 – nil).

**T76** Fees paid to the shareholders' auditors

For the fiscal years (\$ millions)	2017	2016	2015
Audit services	\$ 28.5	\$ 26.1	\$ 25.5
Audit-related services	0.8	0.7	0.9
Tax services outside of the audit scope	–	–	–
Other non-audit services	0.4	0.4	0.4
<b>Total</b>	<b>\$ 29.7</b>	<b>\$ 27.2</b>	<b>\$ 26.8</b>

## Selected Quarterly Information

## T77 Selected quarterly information

As at and for the quarter ended	2017				2016			
	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1
<b>Operating results (\$ millions)</b>								
Net interest income	3,831	3,833	3,728	3,643	3,653	3,602	3,518	3,519
Non-interest income	2,981	3,061	2,853	3,225	3,098	3,038	3,076	2,846
Total revenue	6,812	6,894	6,581	6,868	6,751	6,640	6,594	6,365
Provision for credit losses	536	573	587	553	550	571	752	539
Non-interest expenses	3,668	3,672	3,601	3,689	3,650	3,505	3,817	3,568
Income tax expense	538	546	332	617	540	605	441	444
Net income	2,070	2,103	2,061	2,009	2,011	1,959	1,584	1,814
Net income attributable to common shareholders	1,986	2,016	1,965	1,909	1,908	1,860	1,489	1,730
<b>Operating performance</b>								
Basic earnings per share (\$)	1.66	1.68	1.63	1.58	1.58	1.55	1.24	1.44
Diluted earnings per share (\$)	1.64	1.66	1.62	1.57	1.57	1.54	1.23	1.43
Adjusted diluted earnings per share (\$) <sup>(1)</sup>	1.65	1.68	1.63	1.58	1.58	1.55	1.48	1.44
Return on equity (%)	14.5	14.8	14.9	14.3	14.7	14.8	12.1	13.8
Productivity ratio (%)	53.8	53.3	54.7	53.7	54.1	52.8	57.9	56.1
Core banking margin (%) <sup>(1)</sup>	2.44	2.46	2.54	2.40	2.40	2.38	2.38	2.38
<b>Financial position information (\$ billions)</b>								
Cash and deposits with financial institutions	59.7	57.8	50.9	48.4	46.3	69.8	61.2	75.3
Trading assets	98.5	105.1	111.8	106.5	108.6	103.9	101.4	104.3
Loans	504.4	498.6	496.3	477.4	480.2	472.8	466.8	476.6
Total assets	915.3	906.3	921.6	887.0	896.3	906.8	895.0	919.6
Deposits	625.4	618.1	628.2	604.7	611.9	631.3	609.3	630.9
Common equity	55.5	53.4	55.1	53.0	52.7	50.8	48.9	50.9
Preferred shares and other equity instruments	4.6	3.0	3.0	3.2	3.6	3.1	3.4	3.3
Assets under administration	470.2	481.1	494.2	469.6	472.8	464.9	453.5	452.6
Assets under management	206.7	201.3	205.0	194.0	192.7	187.9	179.4	179.0
<b>Capital and liquidity measures</b>								
Common Equity Tier 1 (CET1) capital ratio (%)	11.5	11.3	11.3	11.3	11.0	10.5	10.1	10.1
Tier 1 capital ratio (%)	13.1	12.6	12.5	12.6	12.4	11.8	11.4	11.2
Total capital ratio (%)	14.9	14.8	14.7	14.8	14.6	14.1	13.6	13.4
Leverage ratio (%)	4.7	4.4	4.4	4.5	4.5	4.2	4.1	4.0
CET1 risk-weighted assets (\$ billions) <sup>(2)</sup>	376.4	365.4	374.9	359.6	364.0	357.7	356.9	374.5
Liquidity coverage ratio (LCR)(%)	125	125	126	132	127	125	121	124
<b>Credit quality</b>								
Net impaired loans (\$ millions) <sup>(3)</sup>	2,243	2,273	2,510	2,416	2,446	2,491	2,347	2,335
Allowance for credit losses (\$ millions)	4,327	4,290	4,591	4,508	4,626	4,542	4,402	4,354
Net impaired loans as a % of loans and acceptances <sup>(3)</sup>	0.43	0.44	0.49	0.49	0.49	0.51	0.49	0.48
Provision for credit losses as a % of average net loans and acceptances (annualized)	0.42	0.45	0.49	0.45	0.45	0.47	0.64	0.45
<b>Common share information</b>								
Closing share price (\$) (TSX)	83.28	77.67	75.88	77.76	72.08	66.33	65.80	57.39
Shares outstanding (millions)								
Average – Basic	1,198	1,200	1,206	1,209	1,206	1,203	1,203	1,203
Average – Diluted	1,215	1,219	1,223	1,229	1,226	1,222	1,228	1,225
End of period	1,199	1,198	1,202	1,208	1,208	1,205	1,203	1,203
Dividends paid per share (\$)	0.79	0.76	0.76	0.74	0.74	0.72	0.72	0.70
Dividend yield (%) <sup>(4)</sup>	4.0	4.0	3.9	4.0	4.3	4.5	4.9	4.9
Market capitalization (\$ billions) (TSX)	99.9	93.1	91.2	94.0	87.1	79.9	79.1	69.0
Book value per common share (\$)	46.24	44.54	45.86	43.87	43.59	42.14	40.70	42.32
Market value to book value multiple	1.8	1.7	1.7	1.8	1.7	1.6	1.6	1.4
Price to earnings multiple (trailing 4 quarters)	12.7	12.0	12.0	13.1	12.4	11.7	11.8	9.9

(1) Refer to page 14 for a discussion of non-GAAP measures.

(2) Credit valuation adjustment (CVA) risk-weighted assets were calculated using scalars of 0.72, 0.77 and 0.81 to compute CET1, Tier 1 and Total capital ratios, respectively in 2017.

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

(4) Based on the average of the high and low common share price for the period.

## Eleven-Year Statistical Review

## T78 Consolidated Statement of Financial Position

	IFRS						
As at October 31 (\$ millions)	2017	2016	2015	2014	2013	2012	2011
<b>Assets</b>							
Cash and deposits with financial institutions	\$ 59,663	\$ 46,344	\$ 73,927	\$ 56,730	\$ 53,338	\$ 47,337	\$ 38,723
Precious metals	5,717	8,442	10,550	7,286	8,880	12,387	9,249
<b>Trading assets</b>							
Securities	78,652	87,287	78,380	95,363	84,196	74,639	62,192
Loans	17,312	19,421	18,341	14,508	11,225	12,857	13,607
Other	2,500	1,853	2,419	3,377	1,068	100	–
	<b>98,464</b>	108,561	99,140	113,248	96,489	87,596	75,799
Financial instruments designated at fair value through profit or loss	13	221	320	111	106	197	375
Securities purchased under resale agreements and securities borrowed	95,319	92,129	87,312	93,866	82,533	66,189	47,181
Derivative financial instruments	35,364	41,657	41,003	33,439	24,503	30,338	37,322
Investment securities	69,269	72,919	43,216	38,662	34,319	33,376	30,176
<b>Loans</b>							
Residential mortgages	236,916	222,888	217,498	212,648	209,865	175,630	161,685
Personal and credit cards	103,331	99,502	91,477	84,204	76,008	68,277	63,317
Business and government	168,449	162,400	153,850	131,098	119,615	111,648	96,743
	<b>508,696</b>	484,790	462,825	427,950	405,488	355,555	321,745
Allowance for credit losses	4,327	4,626	4,197	3,641	3,273	2,977	2,689
	<b>504,369</b>	480,164	458,628	424,309	402,215	352,578	319,056
<b>Other</b>							
Customers' liability under acceptances	13,560	11,978	10,296	9,876	10,556	8,932	8,172
Property and equipment	2,381	2,520	2,286	2,272	2,214	2,218	2,504
Investments in associates	4,586	4,299	4,033	3,461	5,326	4,791	4,434
Goodwill and other intangible assets	12,106	12,141	11,449	10,884	10,704	8,692	7,639
Deferred tax assets	1,713	2,021	2,034	1,763	1,938	2,273	2,214
Other assets	12,749	12,870	12,303	9,759	10,523	11,321	11,579
	<b>47,095</b>	45,829	42,401	38,015	41,261	38,227	36,542
	<b>\$ 915,273</b>	\$ 896,266	\$ 856,497	\$ 805,666	\$ 743,644	\$ 668,225	\$ 594,423
<b>Liabilities</b>							
<b>Deposits</b>							
Personal	\$ 200,030	\$ 199,302	\$ 190,044	\$ 175,163	\$ 171,048	\$ 138,051	\$ 133,025
Business and government	384,988	372,303	375,144	342,367	313,820	293,460	262,833
Financial institutions	40,349	40,272	35,731	36,487	33,019	34,178	25,376
	<b>625,367</b>	611,877	600,919	554,017	517,887	465,689	421,234
Financial instruments designated at fair value through profit or loss	4,663	1,459	1,486	465	174	157	101
<b>Other</b>							
Acceptances	13,560	11,978	10,296	9,876	10,556	8,932	8,172
Obligations related to securities sold short	30,766	23,312	20,212	27,050	24,977	18,622	15,450
Derivative financial instruments	34,200	42,387	45,270	36,438	29,267	35,323	40,236
Obligations related to securities sold under repurchase agreements and securities lent	95,843	97,083	77,015	88,953	77,508	56,968	38,216
Subordinated debentures	5,935	7,633	6,182	4,871	5,841	10,143	6,923
Capital instruments	–	–	–	–	–	–	2,003
Other liabilities	43,314	42,716	41,638	34,785	32,047	32,726	29,848
	<b>223,618</b>	225,109	200,613	201,973	180,196	162,714	140,848
	<b>853,648</b>	838,445	803,018	756,455	698,257	628,560	562,183
<b>Equity</b>							
<b>Common equity</b>							
Common shares	15,644	15,513	15,141	15,231	14,516	13,139	8,336
Retained earnings	38,117	34,752	31,316	28,609	25,068	21,775	18,421
Accumulated other comprehensive income (loss)	1,577	2,240	2,455	949	388	(745)	(497)
Other reserves	116	152	173	176	193	166	96
	<b>55,454</b>	52,657	49,085	44,965	40,165	34,335	26,356
Preferred shares and other equity instruments	4,579	3,594	2,934	2,934	4,084	4,384	4,384
	<b>60,033</b>	56,251	52,019	47,899	44,249	38,719	30,740
<b>Non-controlling interests</b>							
Non-controlling interests in subsidiaries	1,592	1,570	1,460	1,312	1,138	946	626
Capital instrument equity holders	–	–	–	–	–	–	874
	<b>1,592</b>	1,570	1,460	1,312	1,138	946	626
	<b>61,625</b>	57,821	53,479	49,211	45,387	39,665	32,240
	<b>\$ 915,273</b>	\$ 896,266	\$ 856,497	\$ 805,666	\$ 743,644	\$ 668,225	\$ 594,423

T79 Consolidated Statement of Income

For the year ended October 31 (\$ millions)	IFRS						
	2017	2016	2015	2014	2013	2012	2011
<b>Revenue</b>							
<b>Interest income</b>							
Loans	\$ 21,719	\$ 20,419	\$ 18,912	\$ 18,176	\$ 17,359	\$ 15,606	\$ 14,373
Securities	1,403	1,237	922	921	1,000	1,045	986
Securities purchased under resale agreements and securities borrowed	283	158	161	180	190	221	221
Deposits with financial institutions	522	394	292	263	279	287	275
	<b>23,927</b>	<b>22,208</b>	<b>20,287</b>	<b>19,540</b>	<b>18,828</b>	<b>17,159</b>	<b>15,855</b>
<b>Interest expense</b>							
Deposits	7,878	6,793	6,070	6,173	6,397	6,117	5,589
Subordinated debentures	226	232	187	204	339	381	369
Capital instruments	–	–	–	–	–	–	138
Other	788	891	938	858	742	691	745
	<b>8,892</b>	<b>7,916</b>	<b>7,195</b>	<b>7,235</b>	<b>7,478</b>	<b>7,189</b>	<b>6,841</b>
Net interest income	<b>15,035</b>	<b>14,292</b>	<b>13,092</b>	<b>12,305</b>	<b>11,350</b>	<b>9,970</b>	<b>9,014</b>
Non-interest income	<b>12,120</b>	<b>12,058</b>	<b>10,957</b>	<b>11,299</b>	<b>9,949</b>	<b>9,676</b>	<b>8,296</b>
Total revenue	<b>27,155</b>	<b>26,350</b>	<b>24,049</b>	<b>23,604</b>	<b>21,299</b>	<b>19,646</b>	<b>17,310</b>
Provision for credit losses	<b>2,249</b>	<b>2,412</b>	<b>1,942</b>	<b>1,703</b>	<b>1,288</b>	<b>1,252</b>	<b>1,076</b>
Non-interest expenses	<b>14,630</b>	<b>14,540</b>	<b>13,041</b>	<b>12,601</b>	<b>11,664</b>	<b>10,436</b>	<b>9,481</b>
Income before taxes	<b>10,276</b>	<b>9,398</b>	<b>9,066</b>	<b>9,300</b>	<b>8,347</b>	<b>7,958</b>	<b>6,753</b>
Income tax expense	<b>2,033</b>	<b>2,030</b>	<b>1,853</b>	<b>2,002</b>	<b>1,737</b>	<b>1,568</b>	<b>1,423</b>
Net income	<b>\$ 8,243</b>	<b>\$ 7,368</b>	<b>\$ 7,213</b>	<b>\$ 7,298</b>	<b>\$ 6,610</b>	<b>\$ 6,390</b>	<b>\$ 5,330</b>
Net income attributable to non-controlling interests	<b>\$ 238</b>	<b>\$ 251</b>	<b>\$ 199</b>	<b>\$ 227</b>	<b>\$ 231</b>	<b>\$ 196</b>	<b>\$ 149</b>
Non-controlling interests in subsidiaries	<b>238</b>	<b>251</b>	<b>199</b>	<b>227</b>	<b>231</b>	<b>196</b>	<b>91</b>
Capital instrument equity holders	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>58</b>
Net income attributable to equity holders of the Bank	<b>\$ 8,005</b>	<b>\$ 7,117</b>	<b>\$ 7,014</b>	<b>\$ 7,071</b>	<b>\$ 6,379</b>	<b>\$ 6,194</b>	<b>\$ 5,181</b>
Preferred shareholders and other equity instrument holders	<b>129</b>	<b>130</b>	<b>117</b>	<b>155</b>	<b>217</b>	<b>220</b>	<b>216</b>
Common shareholders	<b>\$ 7,876</b>	<b>\$ 6,987</b>	<b>\$ 6,897</b>	<b>\$ 6,916</b>	<b>\$ 6,162</b>	<b>\$ 5,974</b>	<b>\$ 4,965</b>
Earnings per common share (in dollars)							
Basic	<b>\$ 6.55</b>	<b>\$ 5.80</b>	<b>\$ 5.70</b>	<b>\$ 5.69</b>	<b>\$ 5.15</b>	<b>\$ 5.27</b>	<b>\$ 4.63</b>
Diluted	<b>\$ 6.49</b>	<b>\$ 5.77</b>	<b>\$ 5.67</b>	<b>\$ 5.66</b>	<b>\$ 5.11</b>	<b>\$ 5.18</b>	<b>\$ 4.53</b>
Dividends per common share (in dollars)	<b>\$ 3.05</b>	<b>\$ 2.88</b>	<b>\$ 2.72</b>	<b>\$ 2.56</b>	<b>\$ 2.39</b>	<b>\$ 2.19</b>	<b>\$ 2.05</b>

## MANAGEMENT'S DISCUSSION AND ANALYSIS

**T80A** Consolidated Balance Sheet – CGAAP

As at October 31 (\$ millions)	CGAAP			
	2010	2009	2008	2007
<b>Assets</b>				
<b>Cash resources</b>	\$ 46,027	\$ 43,278	\$ 37,318	\$ 29,195
<b>Securities</b>				
Trading	64,684	58,067	48,292	59,685
Available-for-sale	47,228	55,699	38,823	28,426
Equity accounted investments	4,651	3,528	920	724
	116,563	117,294	88,035	88,835
<b>Securities purchased under resale agreements</b>	27,920	17,773	19,451	22,542
<b>Loans</b>				
Residential mortgages	120,482	101,604	115,084	102,154
Personal and credit cards	62,548	61,048	50,719	41,734
Business and government	103,981	106,520	125,503	85,500
	287,011	269,172	291,306	229,388
Allowance for credit losses	2,787	2,870	2,626	2,241
	284,224	266,302	288,680	227,147
<b>Other</b>				
Customers' liability under acceptances	7,616	9,583	11,969	11,538
Derivative instruments	26,852	25,992	44,810	21,960
Land, buildings and equipment	2,450	2,372	2,449	2,061
Other assets	15,005	13,922	14,913	8,232
	51,923	51,869	74,141	43,791
	\$ 526,657	\$ 496,516	\$ 507,625	\$ 411,510
<b>Liabilities and shareholders' equity</b>				
<b>Deposits</b>				
Personal	\$ 128,850	\$ 123,762	\$ 118,919	\$ 100,823
Business and government	210,687	203,594	200,566	161,229
Banks	22,113	23,063	27,095	26,406
	361,650	350,419	346,580	288,458
<b>Other</b>				
Acceptances	7,616	9,583	11,969	11,538
Obligations related to securities sold under repurchase agreements	40,286	36,568	36,506	28,137
Obligations related to securities sold short	21,519	14,688	11,700	16,039
Derivative instruments	31,990	28,806	42,811	24,689
Other liabilities	28,947	24,682	31,063	21,138
	130,358	114,327	134,049	101,541
<b>Subordinated debentures</b>	5,939	5,944	4,352	1,710
<b>Capital instrument liabilities</b>	500	500	500	500
<b>Shareholders' equity</b>				
Preferred shares	3,975	3,710	2,860	1,635
Common shareholders' equity				
Common shares and contributed surplus	5,775	4,946	3,829	3,566
Retained earnings	21,932	19,916	18,549	17,460
Accumulated other comprehensive income (loss)	(4,051)	(3,800)	(3,596)	(3,857)
Total common shareholders' equity	23,656	21,062	18,782	17,169
Total equity attributable to equity holders of the Bank	27,631	24,772	21,642	18,804
Non-controlling interests	579	554	502	497
Total shareholders' equity	28,210	25,326	22,144	19,301
	\$ 526,657	\$ 496,516	\$ 507,625	\$ 411,510



## T81A Consolidated Statement of Income – CGAAP

For the year ended October 31 (\$ millions)	CGAAP			
	2010	2009	2008	2007
<b>Interest income</b>				
Loans	\$ 12,171	\$ 13,973	\$ 15,832	\$ 13,985
Securities	4,227	4,090	4,615	4,680
Securities purchased under resale agreements	201	390	786	1,258
Deposits with banks	292	482	1,083	1,112
	16,891	18,935	22,316	21,035
<b>Interest expense</b>				
Deposits	6,768	8,339	12,131	10,850
Subordinated debentures	289	285	166	116
Capital instrument liabilities	37	37	37	53
Other	1,176	1,946	2,408	2,918
	8,270	10,607	14,742	13,937
Net interest income	8,621	8,328	7,574	7,098
Provision for credit losses	1,239	1,744	630	270
Net interest income after provision for credit losses	7,382	6,584	6,944	6,828
Other income	6,884	6,129	4,302	5,392
Net interest and other income	14,266	12,713	11,246	12,220
<b>Non-interest expenses</b>				
Salaries and employee benefits	4,647	4,344	4,109	3,983
Other	3,535	3,575	3,187	3,011
	8,182	7,919	7,296	6,994
Income before income taxes	6,084	4,794	3,950	5,226
Provision for income taxes	1,745	1,133	691	1,063
Net income	\$ 4,339	\$ 3,661	\$ 3,259	\$ 4,163
Net income attributable to non-controlling interests	\$ 100	\$ 114	\$ 119	\$ 118
Net income attributable to equity holders of the Bank	4,239	3,547	3,140	4,045
Preferred shareholders	201	186	107	51
Common shareholders	\$ 4,038	\$ 3,361	\$ 3,033	\$ 3,994
Average number of common shares outstanding (millions)				
Basic	1,032	1,013	987	989
Diluted	1,034	1,016	993	997
Earnings per common share (in dollars) <sup>(1)</sup>				
Basic	\$ 3.91	\$ 3.32	\$ 3.07	\$ 4.04
Diluted	\$ 3.91	\$ 3.31	\$ 3.05	\$ 4.01
Dividends per common share (in dollars)	\$ 1.96	\$ 1.96	\$ 1.92	\$ 1.74

(1) The calculation of earnings per share is based on full dollar and share amounts.

MANAGEMENT'S DISCUSSION AND ANALYSIS

**T82** Consolidated Statement of Changes in Equity

For the year ended October 31 (\$ millions)	IFRS						
	2017	2016	2015	2014	2013	2012	2011
<b>Common shares</b>							
Balance at beginning of year	\$ 15,513	\$ 15,141	\$ 15,231	\$ 14,516	\$ 13,139	\$ 8,336	\$ 5,750
Issued	313	391	104	771	1,377	4,803	2,586
Purchased for cancellation	(182)	(19)	(194)	(56)	—	—	—
Balance at end of year	\$ 15,644	\$ 15,513	\$ 15,141	\$ 15,231	\$ 14,516	\$ 13,139	\$ 8,336
<b>Retained earnings</b>							
Balance at beginning of year	34,752	31,316	28,609	25,315	21,978	18,421	21,932
IFRS adjustment	—	—	—	(247)	(203)	(144)	(6,248)
Restated balances	34,752	31,316	28,609	25,068	21,775	18,277	15,684
Adjustments	—	—	—	—	—	—	—
Net income attributable to common shareholders of the Bank <sup>(2)</sup>	7,876	6,987	6,897	6,916	6,162	5,974	4,965
Dividends: Preferred <sup>(3)</sup>	—	—	—	—	—	—	—
Common	(3,668)	(3,468)	(3,289)	(3,110)	(2,858)	(2,493)	(2,200)
Purchase of shares for cancellation and premium on redemption	(827)	(61)	(761)	(264)	—	—	—
Other	(16)	(22)	(140) <sup>(4)</sup>	(1)	(11)	17	(28)
Balance at end of year	\$ 38,117	\$ 34,752	\$ 31,316	\$ 28,609	\$ 25,068	\$ 21,775	\$ 18,421
<b>Accumulated other comprehensive income (loss)</b>							
Balance at beginning of year	2,240	2,455	949	545	(31)	(497)	(4,051)
IFRS adjustment	—	—	—	(157)	(714)	32	4,320
Restated balances	2,240	2,455	949	388	(745)	(465)	269
Cumulative effect of adopting new accounting policies	—	—	(5) <sup>(5)</sup>	—	—	—	—
Other comprehensive income (loss)	(663)	(215)	1,511	561	1,133	(280)	(766)
Balance at end of year	\$ 1,577	\$ 2,240	\$ 2,455	\$ 949	\$ 388	\$ (745)	\$ (497)
<b>Other reserves<sup>(7)</sup></b>							
Balance at beginning of year	152	173	176	193	166	96	25
Share-based payments	8	7	14	30	36	38	46
Other	(44)	(28)	(17)	(47)	(9)	32	25
Balance at end of year	\$ 116	\$ 152	\$ 173	\$ 176	\$ 193	\$ 166	\$ 96
Total common equity	\$ 55,454	\$ 52,657	\$ 49,085	\$ 44,965	\$ 40,165	\$ 34,335	\$ 26,356
<b>Preferred shares and other equity instruments</b>							
Balance at beginning of year	3,594	2,934	2,934	4,084	4,384	4,384	3,975
Net income attributable to preferred shareholders and other equity instrument holders of the Bank <sup>(2)</sup>	129	130	117	155	217	220	216
Preferred and other equity instrument dividends <sup>(3)</sup>	(129)	(130)	(117)	(155)	(217)	(220)	(216)
Issued	1,560	1,350	—	—	—	—	409
Redeemed	(575)	(690)	—	(1,150)	(300)	—	—
Balance at end of year	\$ 4,579	\$ 3,594	\$ 2,934	\$ 2,934	\$ 4,084	\$ 4,384	\$ 4,384
<b>Non-controlling interests</b>							
Balance at beginning of year	1,570	1,460	1,312	1,155	1,743	1,500	579
IFRS adjustment	—	—	—	(17)	(797)	(891)	936
Restated balances	1,570	1,460	1,312	1,138	946	609	1,515
Net income attributable to non-controlling interests	238	251	199	227	231	196	149
Distributions to non-controlling interests	(133)	(116)	(86)	(76)	(80)	(44)	(181)
Effect of foreign exchange and others	(83)	(25)	35	23	41	185	17
Balance at end of year	\$ 1,592	\$ 1,570	\$ 1,460	\$ 1,312	\$ 1,138	\$ 946	\$ 1,500
Total equity at end of year	\$ 61,625	\$ 57,821	\$ 53,479	\$ 49,211	\$ 45,387	\$ 39,665	\$ 32,240

- (1) Relates to the adoption of new financial instruments accounting standards under CGAAP.
- (2) Under CGAAP, net income attributable to preferred shareholders was included in retained earnings.
- (3) Under IFRS, preferred dividends are recorded as a reduction to preferred shareholders' equity. Under CGAAP, dividends are a reduction to retained earnings.
- (4) Includes retrospective adjustments primarily related to foreign currency translation on Allowance for Credit Losses with respect to periods prior to 2013 (\$152).
- (5) To reflect the adoption of the own credit risk provisions of IFRS 9 pertaining to financial liabilities designated at fair value through profit or loss.
- (6) Relates to the adoption of the new accounting standard for impairment and classification of financial instruments under CGAAP.
- (7) Under CGAAP, amounts represent Contributed Surplus.

**T83** Consolidated Statement of Comprehensive Income

For the year ended October 31 (\$ millions)	IFRS						
	2017	2016	2015	2014	2013	2012	2011
Net income	\$ 8,243	\$ 7,368	\$ 7,213	\$ 7,298	\$ 6,610	\$ 6,390	\$ 5,330
Other comprehensive income (loss), net of income taxes: Items that will be reclassified subsequently to net income							
Net change in unrealized foreign currency translation gains (losses)	(1,259)	396	1,855	889	346	149	(697)
Net change in unrealized gains (losses) on available-for-sale securities	(55)	(172)	(480)	(38)	110	151	(169)
Net change in gains (losses) on derivative instruments designated as cash flow hedges	(28)	258	55	(6)	93	116	—
Other comprehensive income from investments in associates	56	31	(9)	60	20	25	105
Items that will not be reclassified subsequently to net income							
Net change in remeasurement of employee benefit plan asset and liability	592	(716)	(1)	(320)	563	(747)	—
Net change in fair value due to change in own credit risk on financial liabilities designated under the fair value option <sup>(1)</sup>	(21)	(16)	15	N/A	N/A	N/A	N/A
Other comprehensive income from investments in associates	6	(10)	1	(2)	—	—	—
Other comprehensive income (loss)	(709)	(229)	1,436	583	1,132	(306)	(761)
Comprehensive income	\$ 7,534	\$ 7,139	\$ 8,649	\$ 7,881	\$ 7,742	\$ 6,084	\$ 4,569
Comprehensive income attributable to:							
Common shareholders of the Bank	\$ 7,213	\$ 6,772	\$ 8,408	\$ 7,477	\$ 7,298	\$ 5,694	\$ 4,199
Preferred shareholders and other equity instrument holders of the Bank	129	130	117	155	217	220	216
Non-controlling interests in subsidiaries	192	237	124	249	227	170	96
Capital instrument equity holders	—	—	—	—	—	—	58
	\$ 7,534	\$ 7,139	\$ 8,649	\$ 7,881	\$ 7,742	\$ 6,084	\$ 4,569

(1) In accordance with the transition requirements for the own credit risk provisions of IFRS 9, prior year comparatives have not been restated for the adoption of this standard in 2015.

CGAAP			
2010	2009	2008	2007
\$ 4,946	\$ 3,829	\$ 3,566	\$ 3,425
804	1,117	266	184
-	-	(3)	(43)
\$ 5,750	\$ 4,946	\$ 3,829	\$ 3,566
19,916	18,549	17,460	15,843
-	-	-	-
19,916	18,549	17,460	15,843
-	-	-	(61) <sup>(1)</sup>
4,239	3,547	3,140	4,045
(201)	(186)	(107)	(51)
(2,023)	(1,990)	(1,896)	(1,720)
-	-	(37)	(586)
1	(4)	(11)	(10)
\$ 21,932	\$ 19,916	\$ 18,549	\$ 17,460
(3,800)	(3,596)	(3,857)	(2,321)
(3,800)	(3,596)	(3,857)	(2,321)
(251)	595 <sup>(6)</sup>	-	683
	(799)	261	(2,219)
\$ (4,051)	\$ (3,800)	\$ (3,596)	\$ (3,857)
-	-	-	-
25	-	-	-
-	-	-	-
\$ 25	\$ -	\$ -	\$ -
\$ 23,656	\$ 21,062	\$ 18,782	\$ 17,169
3,710	2,860	1,635	600
-	-	-	-
265	850	1,225	1,035
-	-	-	-
\$ 3,975	\$ 3,710	\$ 2,860	\$ 1,635
554	502	N/A	N/A
-	-	-	-
554	502	N/A	N/A
100	114	N/A	N/A
(35)	(36)	N/A	N/A
(40)	(26)	N/A	N/A
\$ 579	\$ 554	\$ 502	\$ 497
\$ 28,210	\$ 25,326	\$ 22,144	\$ 19,301

CGAAP			
2010	2009	2008	2007
\$ 4,339	\$ 3,661	\$ 3,259	\$ 4,163
(591)	(1,736)	2,368	(2,228)
278	894	(1,588)	(67)
62	43	(519)	76
-	-	-	-
-	-	-	-
N/A	N/A	N/A	N/A
(251)	(799)	261	(2,219)
\$ 4,088	\$ 2,862	\$ 3,520	\$ 1,944
\$ 3,787	\$ 2,562	\$ 3,294	\$ 1,775
201	186	107	51
100	114	119	118
-	-	-	-
\$ 4,088	\$ 2,862	\$ 3,520	\$ 1,944

## T84 Other statistics

For the year ended October 31	IFRS						
	2017	2016	2015	2014	2013	2012	2011
<b>Operating performance</b>							
Basic earnings per share (\$)	6.55	5.80	5.70	5.69	5.15	5.27	4.63
Diluted earnings per share (\$)	6.49	5.77	5.67	5.66	5.11	5.18	4.53
Return on equity (%)	14.6	13.8	14.6	16.1	16.6	19.9	20.3
Productivity ratio (%)	53.9	55.2	54.2	53.4	54.8	53.1	54.8
Return on assets (%)	0.90	0.81	0.84	0.92	0.88	0.97	0.91
Core banking margin (%) <sup>(1)</sup>	2.46	2.38	2.39	2.39	2.31	2.31	2.32
Net interest margin on total average assets (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Capital measures<sup>(2)</sup></b>							
Common Equity Tier 1 (CET1) capital ratio (%)	11.5	11.0	10.3	10.8	9.1	N/A	N/A
Tier 1 capital ratio (%)	13.1	12.4	11.5	12.2	11.1	13.6	12.2
Total capital ratio (%)	14.9	14.6	13.4	13.9	13.5	16.7	13.9
Leverage ratio (%)	4.7	4.5	4.2	N/A	N/A	N/A	N/A
<b>Common share information</b>							
Closing share price \$(TSX)	83.28	72.08	61.49	69.02	63.39	54.25	52.53
Number of shares outstanding (millions)	1,199	1,208	1,203	1,217	1,209	1,184	1,089
Dividends paid per share (\$)	3.05	2.88	2.72	2.56	2.39	2.19	2.05
Dividend yield (%) <sup>(3)</sup>	4.0	4.7	4.4	3.8	4.1	4.2	3.7
Price to earnings multiple (trailing 4 quarters)	12.7	12.4	10.8	12.1	12.3	10.3	11.3
Book value per common share (\$)	46.24	43.59	40.80	36.96	33.23	28.99	24.20
<b>Other information</b>							
Average total assets (\$ millions)	912,619	913,844	860,607	795,641	748,901	659,538	586,101
Number of branches and offices	3,003	3,113	3,177	3,288	3,330	3,123	2,926
Number of employees	88,645	88,901	89,214	86,932	86,690	81,497	75,362
Number of automated banking machines	8,140	8,144	8,191	8,732	8,471	7,341	6,260

(1) Refer to page 14 for a discussion of non-GAAP measures.

(2) Effective November 1, 2012, regulatory capital ratios are determined in accordance with Basel III rules as an all-in basis. Comparative amounts for periods 2012-2008 were determined in accordance with Basel II rules. Amounts prior to 2008 were determined in accordance with Basel I rules and have not been restated.

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

CGAAP			
2010	2009	2008	2007
3.91	3.32	3.07	4.04
3.91	3.31	3.05	4.01
18.3	16.7	16.7	22.0
52.8	54.8	61.4	56.0
0.84	0.71	0.72	1.03
N/A	N/A	N/A	N/A
1.67	1.62	1.66	1.76
N/A	N/A	N/A	N/A
11.8	10.7	9.3	9.3
13.8	12.9	11.1	10.5
N/A	N/A	N/A	N/A
54.67	45.25	40.19	53.48
1,043	1,025	992	984
1.96	1.96	1.92	1.74
3.9	5.4	4.3	3.4
14.0	13.6	13.1	13.2
22.68	20.55	18.94	17.45
515,991	513,149	455,539	403,475
2,784	2,686	2,672	2,331
70,772	67,802	69,049	58,113
5,978	5,778	5,609	5,283

## Management's Report on Internal Control Over Financial Reporting

The management of The Bank of Nova Scotia (the Bank) is responsible for establishing and maintaining adequate internal control over financial reporting, and have designed such internal control over financial reporting to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with International Financial Reporting Standards as issued by The International Accounting Standards Board.

Management has used the Internal Control – Integrated Framework (2013) to evaluate the effectiveness of internal control over financial reporting, which is a recognized and suitable framework developed by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management has evaluated the design and operation of the Bank's internal control over financial reporting as of October 31, 2017, and has concluded that such internal control over financial reporting is effective. There are no material weaknesses that have been identified by management in this regard.

KPMG LLP, the independent auditors appointed by the shareholders of the Bank, who have audited the consolidated financial statements, have also audited internal control over financial reporting and have issued their report below.

Brian J. Porter  
President and Chief Executive Officer

Sean McGuckin  
Chief Financial Officer

Toronto, Canada  
November 28, 2017

## Report of Independent Registered Public Accounting Firm

To the Shareholders of The Bank of Nova Scotia

We have audited The Bank of Nova Scotia's internal control over financial reporting as of October 31, 2017, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Bank of Nova Scotia's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying "Management's Report on Internal Control over Financial Reporting". Our responsibility is to express an opinion on The Bank of Nova Scotia's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, The Bank of Nova Scotia maintained, in all material respects, effective internal control over financial reporting as of October 31, 2017, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

We also have audited, in accordance with Canadian generally accepted auditing standards and the standards of the Public Company Accounting Oversight Board (United States), the consolidated statements of financial position of The Bank of Nova Scotia as at October 31, 2017 and October 31, 2016, 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, 2017, and notes, comprising a summary of significant accounting policies and other explanatory information, and our report dated November 28, 2017 expressed an unmodified (unqualified) opinion on those consolidated financial statements.



Chartered Professional Accountants, Licensed Public Accountants  
Toronto, Canada

November 28, 2017

# TABLE OF CONTENTS

<b>126</b>	Management's Responsibility for Financial Information
<b>127</b>	Independent Auditors' Report of Registered Public Accounting Firm
<b>128</b>	Consolidated Statement of Financial Position
<b>129</b>	Consolidated Statement of Income
<b>130</b>	Consolidated Statement of Comprehensive Income
<b>131</b>	Consolidated Statement of Changes in Equity
<b>132</b>	Consolidated Statement of Cash Flows
<b>133</b>	Notes to the 2017 Consolidated Financial Statements

## Management's Responsibility for Financial Information

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

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

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

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

The system of internal controls is further supported by a professional staff of internal auditors who conduct periodic audits of all aspects of the Bank's operations. As well, the Bank's Chief Auditor has full and free access to, and meets periodically with the Audit 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 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 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, 2017 and October 31, 2016 and its consolidated financial performance and its consolidated cash flows for each of the years in the three-year period ended October 31, 2017 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 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

Sean McGuckin  
Chief Financial Officer

Toronto, Canada  
November 28, 2017



## 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, which comprise the consolidated statements of financial position as at October 31, 2017 and October 31, 2016, 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, 2017, and notes, comprising a summary of significant accounting policies and other explanatory information.

### *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.

### *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). Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about 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 examining, on a test basis, evidence supporting the amounts and disclosures in the consolidated financial statements, evaluating the appropriateness of accounting policies 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 basis for our audit opinion.

### *Opinion*

In our opinion, the consolidated financial statements present fairly, in all material respects, the consolidated financial position of The Bank of Nova Scotia as at October 31, 2017 and October 31, 2016 and its consolidated financial performance and its consolidated cash flows for each of the years in the three-year period ended October 31, 2017 in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board.

### *Other Matter*

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), The Bank of Nova Scotia's internal control over financial reporting as of October 31, 2017, 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 28, 2017 expressed an unmodified (unqualified) opinion on the effectiveness of The Bank of Nova Scotia's internal control over financial reporting.



Chartered Professional Accountants, Licensed Public Accountants  
Toronto, Canada  
November 28, 2017

Consolidated Statement of Financial Position

As at October 31 (\$ millions)	Note	2017	2016
<b>Assets</b>			
Cash and deposits with financial institutions	5	\$ 59,663	\$ 46,344
Precious metals		5,717	8,442
<b>Trading assets</b>			
Securities	7(a)	78,652	87,287
Loans	7(b)	17,312	19,421
Other		2,500	1,853
		<b>98,464</b>	108,561
Financial instruments designated at fair value through profit or loss	8	13	221
Securities purchased under resale agreements and securities borrowed		95,319	92,129
Derivative financial instruments	9	35,364	41,657
Investment securities	11	69,269	72,919
<b>Loans</b>			
Residential mortgages	12	236,916	222,888
Personal and credit cards	12	103,331	99,502
Business and government	12	168,449	162,400
		<b>508,696</b>	484,790
Allowance for credit losses	12(d)	4,327	4,626
		<b>504,369</b>	480,164
<b>Other</b>			
Customers' liability under acceptances		13,560	11,978
Property and equipment	15	2,381	2,520
Investments in associates	16	4,586	4,299
Goodwill and other intangible assets	17	12,106	12,141
Deferred tax assets	26(c)	1,713	2,021
Other assets	18	12,749	12,870
		<b>47,095</b>	45,829
		<b>\$ 915,273</b>	\$ 896,266
<b>Liabilities</b>			
<b>Deposits</b>			
Personal	19	\$ 200,030	\$ 199,302
Business and government	19	384,988	372,303
Financial institutions	19	40,349	40,272
		<b>625,367</b>	611,877
Financial instruments designated at fair value through profit or loss	8	4,663	1,459
<b>Other</b>			
Acceptances		13,560	11,978
Obligations related to securities sold short		30,766	23,312
Derivative financial instruments	9	34,200	42,387
Obligations related to securities sold under repurchase agreements and securities lent		95,843	97,083
Subordinated debentures	20	5,935	7,633
Other liabilities	21	43,314	42,716
		<b>223,618</b>	225,109
		<b>853,648</b>	838,445
<b>Equity</b>			
<b>Common equity</b>			
Common shares	23(a)	15,644	15,513
Retained earnings		38,117	34,752
Accumulated other comprehensive income (loss)		1,577	2,240
Other reserves		116	152
Total common equity		<b>55,454</b>	52,657
Preferred shares and other equity instruments	23(b)	4,579	3,594
Total equity attributable to equity holders of the Bank		<b>60,033</b>	56,251
Non-controlling interests in subsidiaries	30(b)	1,592	1,570
		<b>61,625</b>	57,821
		<b>\$ 915,273</b>	\$ 896,266

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	2017	2016	2015
<b>Revenue</b>				
<b>Interest income</b>				
Loans		\$ 21,719	\$ 20,419	\$ 18,912
Securities		1,403	1,237	922
Securities purchased under resale agreements and securities borrowed		283	158	161
Deposits with financial institutions		522	394	292
		<b>23,927</b>	22,208	20,287
<b>Interest expense</b>				
Deposits		7,878	6,793	6,070
Subordinated debentures		226	232	187
Other		788	891	938
		<b>8,892</b>	7,916	7,195
<b>Net interest income</b>				
		<b>15,035</b>	14,292	13,092
<b>Non-interest income</b>				
Banking	31	3,855	3,669	3,360
Wealth management	31	3,318	3,282	3,269
Underwriting and other advisory		598	594	525
Non-trading foreign exchange		557	540	492
Trading revenues	32	1,259	1,403	1,185
Net gain on sale of investment securities	11(e)	380	534	639
Net income from investments in associated corporations	16	407	414	405
Insurance underwriting income, net of claims		626	603	556
Other		1,120	1,019	526
		<b>12,120</b>	12,058	10,957
<b>Total revenue</b>				
		<b>27,155</b>	26,350	24,049
Provision for credit losses	12(d)	2,249	2,412	1,942
		<b>24,906</b>	23,938	22,107
<b>Non-interest expenses</b>				
Salaries and employee benefits		7,375	7,025	6,681
Premises and technology		2,436	2,238	2,086
Depreciation and amortization		761	684	584
Communications		437	442	434
Advertising and business development		581	617	592
Professional		775	693	548
Business and capital taxes		423	403	361
Other		1,842	2,438	1,755
		<b>14,630</b>	14,540	13,041
<b>Income before taxes</b>				
		<b>10,276</b>	9,398	9,066
Income tax expense	26	2,033	2,030	1,853
<b>Net income</b>				
		<b>\$ 8,243</b>	\$ 7,368	\$ 7,213
Net income attributable to non-controlling interests in subsidiaries	30(b)	238	251	199
<b>Net income attributable to equity holders of the Bank</b>				
		<b>\$ 8,005</b>	\$ 7,117	\$ 7,014
Preferred shareholders and other equity instrument holders		129	130	117
Common shareholders		<b>\$ 7,876</b>	\$ 6,987	\$ 6,897
<b>Earnings per common share (in dollars)</b>				
Basic	33	\$ 6.55	\$ 5.80	\$ 5.70
Diluted	33	6.49	5.77	5.67
Dividends paid per common share (in dollars)	23(a)	3.05	2.88	2.72

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

## Consolidated Statement of Comprehensive Income

For the year ended October 31 (\$ millions)

	2017	2016	2015
<b>Net income</b>	<b>\$ 8,243</b>	\$ 7,368	\$ 7,213
<b>Other comprehensive income (loss)</b>			
<b>Items that will be reclassified subsequently to net income</b>			
Net change in unrealized foreign currency translation gains (losses):			
Net unrealized foreign currency translation gains (losses)	<b>(1,564)</b>	614	3,145
Net gains (losses) on hedges of net investments in foreign operations	<b>404</b>	(300)	(1,677)
Income tax expense (benefit):			
Net unrealized foreign currency translation gains (losses)	<b>(8)</b>	(3)	46
Net gains (losses) on hedges of net investments in foreign operations	<b>107</b>	(79)	(433)
	<b>(1,259)</b>	396	1,855
Net change in unrealized gains (losses) on available-for-sale securities:			
Net unrealized gains (losses) on available-for-sale securities	<b>(217)</b>	308	386
Reclassification of net (gains) losses to net income <sup>(1)</sup>	<b>143</b>	(549)	(966)
Income tax expense (benefit):			
Net unrealized gains (losses) on available-for-sale securities	<b>(61)</b>	82	161
Reclassification of net (gains) losses to net income	<b>42</b>	(151)	(261)
	<b>(55)</b>	(172)	(480)
Net change in gains (losses) on derivative instruments designated as cash flow hedges:			
Net gains (losses) on derivative instruments designated as cash flow hedges	<b>1,722</b>	(7)	1,519
Reclassification of net (gains) losses <sup>(2)</sup>	<b>(1,761)</b>	357	(1,444)
Income tax expense (benefit):			
Net gains (losses) on derivative instruments designated as cash flow hedges	<b>454</b>	9	450
Reclassification of net (gains) losses	<b>(465)</b>	83	(430)
	<b>(28)</b>	258	55
Other comprehensive income (loss) from investments in associates	<b>56</b>	31	(9)
<b>Items that will not be reclassified subsequently to net income</b>			
Net change in remeasurement of employee benefit plan asset and liability:			
Actuarial gains (losses) on employee benefit plans	<b>805</b>	(972)	(3)
Income tax expense (benefit)	<b>213</b>	(256)	(2)
	<b>592</b>	(716)	(1)
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	<b>(28)</b>	(23)	20
Income tax expense (benefit)	<b>(7)</b>	(7)	5
	<b>(21)</b>	(16)	15
Other comprehensive income (loss) from investments in associates	<b>6</b>	(10)	1
Other comprehensive income (loss)	<b>(709)</b>	(229)	1,436
<b>Comprehensive income</b>	<b>\$ 7,534</b>	\$ 7,139	\$ 8,649
Comprehensive income attributable to non-controlling interests	<b>192</b>	237	124
Comprehensive income attributable to equity holders of the Bank	<b>\$ 7,342</b>	\$ 6,902	\$ 8,525
Preferred shareholders and other equity instrument holders	<b>129</b>	130	117
Common shareholders	<b>\$ 7,213</b>	\$ 6,772	\$ 8,408

(1) Includes amounts related to qualifying hedges.

(2) 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)	Accumulated other comprehensive income (loss)											Total
	Common shares (Note 23)	Retained earnings <sup>(1)</sup>	Foreign currency translation	Available-for-sale securities	Cash flow hedges	Other <sup>(2)</sup>	Other reserves <sup>(3)</sup>	Total common equity	Preferred shares and other equity instruments (Note 23)	Total attributable to equity holders	Non-controlling interests in subsidiaries (Note 30(b))	
<b>Balance as at November 1, 2016</b>	\$ 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)
<b>Total comprehensive income</b>	\$ –	\$ 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)
Common dividends paid	–	(3,668)	–	–	–	–	–	(3,668)	–	(3,668)	–	(3,668)
Preferred dividends paid	–	–	–	–	–	–	–	–	(129)	(129)	–	(129)
Distributions to non-controlling interests	–	–	–	–	–	–	–	–	–	–	(133)	(133)
Share-based payments	–	–	–	–	–	–	8	8	–	8	–	8
Other	–	(16)	–	–	–	–	–	(16)	–	(16)	(37) <sup>(4)</sup>	(53)
<b>Balance as at October 31, 2017</b>	\$ 15,644	\$ 38,117	\$ 1,861	\$ (46)	\$ 235	\$ (473)	\$ 116	\$ 55,454	\$ 4,579	\$ 60,033	\$ 1,592	\$ 61,625
<b>Balance as at November 1, 2015</b>	\$ 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)
<b>Total comprehensive income</b>	\$ –	\$ 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)
Common dividends paid	–	(3,468)	–	–	–	–	–	(3,468)	–	(3,468)	–	(3,468)
Preferred dividends paid	–	–	–	–	–	–	–	–	(130)	(130)	–	(130)
Distributions to non-controlling interests	–	–	–	–	–	–	–	–	–	–	(116)	(116)
Share-based payments	–	–	–	–	–	–	7	7	–	7	–	7
Other	–	(22)	–	–	–	–	–	(22)	–	(22)	(11) <sup>(4)</sup>	(33)
<b>Balance as at October 31, 2016</b>	\$ 15,513	\$ 34,752	\$ 3,055	\$ 14	\$ 264	\$(1,093)	\$ 152	\$ 52,657	\$ 3,594	\$ 56,251	\$ 1,570	\$ 57,821
<b>Balance as at November 1, 2014</b>	\$ 15,231	\$ 28,609	\$ 700	\$ 664	\$ (48)	\$(367)	\$ 176	\$ 44,965	\$ 2,934	\$ 47,899	\$ 1,312	\$ 49,211
Net income	–	6,897	–	–	–	–	–	6,897	117	7,014	199	7,213
Other comprehensive income (loss)	–	–	1,933	(470)	55	(7)	–	1,511	–	1,511	(75)	1,436
<b>Total comprehensive income</b>	\$ –	\$ 6,897	\$ 1,933	\$ (470)	\$ 55	\$(7)	\$ –	\$ 8,408	\$ 117	\$ 8,525	\$ 124	\$ 8,649
Shares issued	104	–	–	–	–	–	(17)	87	–	87	–	87
Shares repurchased/redeemed	(194)	(761)	–	–	–	–	–	(955)	–	(955)	–	(955)
Common dividends paid	–	(3,289)	–	–	–	–	–	(3,289)	–	(3,289)	–	(3,289)
Preferred dividends paid	–	–	–	–	–	–	–	–	(117)	(117)	–	(117)
Distributions to non-controlling interests	–	–	–	–	–	–	–	–	–	–	(86)	(86)
Share-based payments	–	–	–	–	–	–	14	14	–	14	–	14
Other	–	(140) <sup>(5)</sup>	–	–	–	(5) <sup>(6)</sup>	–	(145)	–	(145)	110 <sup>(4)</sup>	(35)
<b>Balance as at October 31, 2015</b>	\$ 15,141	\$ 31,316	\$ 2,633	\$ 194	\$ 7	\$(379)	\$ 173	\$ 49,085	\$ 2,934	\$ 52,019	\$ 1,460	\$ 53,479

(1) Includes undistributed retained earnings of \$61 (2016 – \$63; 2015 – \$61) related to a foreign associated corporation, which is subject to local regulatory restriction.

(2) Includes Share from associates, Employee benefits and Own credit risk.

(3) Represents amounts on account of share-based payments (refer to Note 25).

(4) Includes changes to non-controlling interests arising from business combinations and other.

(5) Includes retrospective adjustments primarily related to foreign currency translation on Allowance for Credit Losses with respect to periods prior to 2013 (\$152).

(6) Represents retrospective adjustments to reflect the adoption of the own credit risk provisions of IFRS 9 pertaining to financial liabilities designated at fair value through profit or loss in 2015.

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)

	2017	2016	2015
<b>Cash flows from operating activities</b>			
Net income	\$ 8,243	\$ 7,368	\$ 7,213
Adjustment for:			
Net interest income	(15,035)	(14,292)	(13,092)
Depreciation and amortization	761	684	584
Provisions for credit losses	2,249	2,412	1,942
Equity-settled share-based payment expense	8	7	14
Net gain on sale of investment securities	(380)	(534)	(639)
Net gain on disposition of business	(62)	(116)	–
Net income from investments in associated corporations	(407)	(414)	(405)
Income tax expense	2,033	2,030	1,853
Restructuring charge	–	378	–
Changes in operating assets and liabilities:			
Trading assets	8,377	(10,044)	20,302
Securities purchased under resale agreements and securities borrowed	(4,631)	(5,363)	13,991
Loans	(32,589)	(20,355)	(22,942)
Deposits	27,516	6,702	13,915
Obligations related to securities sold short	7,533	4,007	(8,101)
Obligations related to assets sold under repurchase agreements and securities lent	849	20,865	(18,982)
Net derivative financial instruments	(391)	(3,806)	2,442
Other, net <sup>(1)</sup>	(1,997)	2,293	7,286
Dividends received	1,600	873	1,147
Interest received	23,649	21,099	19,145
Interest paid	(8,730)	(7,787)	(7,262)
Income tax paid	(2,012)	(1,471)	(1,985)
Net cash from/(used in) operating activities	16,584	4,536	16,426
<b>Cash flows from investing activities</b>			
Interest-bearing deposits with financial institutions	(14,006)	28,447	(8,448)
Purchase of investment securities	(64,560)	(94,441)	(44,684)
Proceeds from sale and maturity of investment securities	66,179	65,069	41,649
Acquisition/sale of subsidiaries, associated corporations or business units, net of cash acquired	229	(1,050)	(701)
Property and equipment, net of disposals	3	(348)	(282)
Other, net	(385)	(431)	(1,053)
Net cash from/(used in) investing activities	(12,540)	(2,754)	(13,519)
<b>Cash flows from financing activities</b>			
Proceeds from issue of subordinated debentures	–	2,465	1,248
Redemption/repayment of subordinated debentures	(1,500)	(1,035)	(18)
Proceeds from common shares issued	313	391	101
Proceeds from preferred shares and other equity instruments issued	1,560	1,350	–
Redemption of preferred shares	(575)	(690)	–
Common shares purchased for cancellation	(1,009)	(80)	(955)
Cash dividends paid	(3,797)	(3,598)	(3,406)
Distributions to non-controlling interests	(133)	(116)	(86)
Other, net <sup>(1)</sup>	2,209	(320)	800
Net cash from/(used in) financing activities	(2,932)	(1,633)	(2,316)
Effect of exchange rate changes on cash and cash equivalents	(142)	(18)	305
Net change in cash and cash equivalents	970	131	896
Cash and cash equivalents at beginning of year <sup>(2)</sup>	6,855	6,724	5,828
Cash and cash equivalents at end of year <sup>(2)</sup>	\$ 7,825	\$ 6,855	\$ 6,724

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

(2) Represents cash and non-interest bearing deposits with financial institutions (refer to Note 5).

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

# TABLE OF CONTENTS

Page	Note		Page	Note	
134	1	Reporting entity	177	19	Deposits
134	2	Basis of preparation	177	20	Subordinated debentures
135	3	Significant accounting policies	178	21	Other liabilities
148	4	Future accounting developments	178	22	Provisions
150	5	Cash and deposits with financial institutions	179	23	Common and preferred shares and other equity instruments
150	6	Fair value of financial instruments	182	24	Capital management
156	7	Trading assets	183	25	Share-based payments
157	8	Financial instruments designated at fair value through profit or loss	186	26	Corporate income taxes
158	9	Derivative financial instruments	188	27	Employee benefits
162	10	Offsetting financial assets and financial liabilities	193	28	Operating segments
164	11	Investment securities	195	29	Related party transactions
167	12	Loans, impaired loans and allowance for credit losses	196	30	Principal subsidiaries and non-controlling interests in subsidiaries
170	13	Derecognition of financial assets	197	31	Non-interest income
171	14	Structured entities	197	32	Trading revenues
174	15	Property and equipment	198	33	Earnings per share
174	16	Investments in associates	198	34	Guarantees, commitments and pledged assets
175	17	Goodwill and other intangible assets	200	35	Financial instruments – risk management
176	18	Other assets	208	36	Business combinations and divestitures
			208	37	Event after the Consolidated Statement of Financial Position date

## 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, 2017 have been approved by the Board of Directors for issue on November 28, 2017.

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 held-for-trading
- Financial assets and liabilities designated at fair value through profit or loss
- Derivative financial instruments
- Available-for-sale investment securities

### 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 investment securities, 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 12(d)
Fair value of financial instruments	Note 3 Note 6
Corporate income taxes	Note 3 Note 26
Employee benefits	Note 3 Note 27
Goodwill and intangible assets	Note 3 Note 17
Fair value of all identifiable assets and liabilities as a result of business combinations	Note 3 Note 36
Impairment of investment securities	Note 3 Note 11
Impairment of non-financial assets	Note 3 Note 15
Structured entities	Note 3 Note 14
De facto control of other entities	Note 3 Note 30
Derecognition of financial assets and liabilities	Note 3 Note 13
Provisions	Note 3 Note 22

### 3 Significant Accounting Policies

The significant accounting policies used in the preparation of these consolidated financial statements, including any additional accounting requirements of OSFI, as set out below, have been applied consistently to all periods presented in these consolidated financial statements.

#### Basis of consolidation

The consolidated financial statements include the assets, liabilities, financial performance and cash flows of the Bank and all of its subsidiaries, after elimination of intercompany transactions and balances. Subsidiaries are defined as entities controlled by the Bank 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**

##### *Date of recognition*

The Bank initially recognizes loans, deposits, subordinated debentures and debt securities issued on the date at which they are originated or purchased. 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.

##### *Initial classification and measurement*

The classification of financial assets and liabilities at initial recognition depends on the purpose and intention for which the financial assets are acquired and liabilities issued and their characteristics. The initial measurement of a financial asset or liability is at fair value.

*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. Quoted market prices 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; and 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.

*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.

*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.

*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.

*Securities purchased and sold under resale agreements*

Securities purchased under resale agreements (reverse repurchase agreements) and securities sold under agreements to repurchase (repurchase agreements) are treated as collateralized financing arrangements and are recorded 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 income and interest expense are recorded on an accrual basis in the Consolidated Statement of Income.

*Obligations related to securities sold short*

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

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

#### *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.

#### *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.

#### **Purchased loans**

All purchased loans are initially measured at fair value on the date of acquisition. In arriving at the fair value, the Bank considers interest rate mark adjustments and credit mark adjustments. As a result of recording all purchased loans at fair value, no allowances for credit losses are recorded in the Consolidated Statement of Financial Position on the date of acquisition. Consequently none of the purchased loans are considered to be impaired on the date of acquisition.

The interest rate mark on the date of acquisition is principally set up for fixed interest rate loans and captures the impact of the interest rate differential between the contractual rate of interest on the loan and the prevailing interest rate on the loan on the date of acquisition for the remaining term. The interest rate mark is fully amortized into interest income in the Consolidated Statement of Income over the expected life of the loan using the effective interest method.

An aggregate credit mark adjustment is established to capture management's best estimate of cash flow shortfalls on the loans over their life time as determined at the date of acquisition. The credit mark adjustment comprises of both an incurred loss mark and a future expected loss mark.

For individually assessed loans, the credit mark established at the date of acquisition is tracked over the life of the loan. Changes to the expected cash flows of these loans from those expected at the date of acquisition are recorded as a charge/recovery in the provision for credit losses in the Consolidated Statement of Income.

Where loans are not individually assessed for determining losses, a portfolio approach is taken to determine expected losses at the date of acquisition. The portfolio approach will result in both an incurred loss mark and a future expected loss mark. The incurred loss mark is assessed at the end of each reporting period against the performance of the loan portfolio and an increase in expected cash flows will result in recovery in provision for credit losses in the Consolidated Statement of Income while any cash flows lower than expected will result in an additional provision for credit losses. The future expected loss mark is amortized into income as losses are recognized or as the portfolio of loans winds down over its expected life. An assessment is required at the end of each reporting period to determine the reasonableness of the unamortized balance in relation to the loan portfolio. An overall benefit is only recognized to the extent that the amortized amount is greater than the actual losses incurred. A net charge is recorded if the actual losses exceed the amortized amounts.

#### **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.

#### *Customer's liability under acceptances*

The Bank's potential liability under acceptances is reported as a liability in the Consolidated Statement of Financial Position. The Bank has equivalent claims against its customers in the event of a call on these commitments, which are reported as an asset. Fees earned are reported in fee and commission revenues – banking fees in the Consolidated Statement of Income.

#### **Hedge accounting**

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 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. The Bank utilizes fair value hedges primarily to convert fixed rate financial instruments to floating rate financial instruments. Hedged items include available-for-sale debt and equity securities, loans, deposit liabilities and subordinated debentures. Hedging instruments include single-currency interest rate swaps, cross-currency interest rate swaps, foreign currency forwards and foreign currency liabilities.

#### *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. 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. Hedged items include available-for-sale 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 and foreign currency forwards.

#### *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 the final five years' average salary), 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 discount rate used to determine the defined benefit obligation is set by reference to the yields on high quality corporate bonds that have durations that match the terms of the Bank's obligations. Prior to 2016, the discount rate used to determine the annual benefit expense was the same as the rate used to determine the defined benefit obligation at the beginning of the period. Beginning in 2016, 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 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 income or expense 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 change in the return on plan 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 trading revenues.

The carrying amount of interest-bearing financial instruments, measured at amortized cost or classified as available-for-sale, 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, 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 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 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, 2017*

##### Financial instruments

On July 24, 2014, the IASB issued IFRS 9 *Financial Instruments*, which will replace IAS 39. The standard covers three broad topics: Classification and Measurement, Impairment and Hedging. IFRS 9 must be adopted retrospectively. Restatement of comparatives is not required, though it is permitted.

On January 9, 2015, the Office of the Superintendent of Financial Institutions (OSFI) issued an advisory on the early adoption of IFRS 9 for Domestic Systematically Important Banks (D-SIBs) for annual reporting periods beginning on November 1, 2017.

On June 21, 2016, OSFI issued revised accounting and disclosure guidelines for IFRS 9 Financial Instruments, that provide application guidance for federally regulated entities. The guidelines are effective for the Bank with the adoption of IFRS 9 on November 1, 2017 and are consistent with Basel Committee on Banking Supervision (BCBS) Guidance on credit risk and accounting for expected credit losses issued in December 2015.

On October 11, 2016, BCBS published a consultative document: Regulatory treatment of accounting provisions – interim approach and transitional arrangements and a discussion document: Regulatory treatment of accounting provisions on the policy considerations related to the regulatory treatment of accounting provisions under the Basel III capital framework. BCBS is seeking comments on these documents by January 13, 2017.

##### *Classification and measurement*

The standard requires the Bank to consider two criteria when determining the measurement basis for debt instruments (e.g. securities) held as financial assets; i) its business model for managing those financial assets and ii) the cash flow characteristics of the assets. Based on these criteria, debt instruments are measured at amortized cost, fair value through OCI, or fair value through profit or loss.

Equity instruments are measured at fair value through profit or loss. However, the Bank may, at initial recognition of a non-trading equity instrument, irrevocably elect to designate the instrument as fair value through OCI, with no subsequent recycling to profit and loss, while recognizing dividend income in profit and loss. This designation is also available to non-trading equity instrument holdings on date of transition.

In addition, the Bank may, at initial recognition, irrevocably elect to designate a financial asset as fair value through profit or loss, if doing so eliminates or significantly reduces an accounting mismatch which would otherwise arise. This designation is also available to existing financial assets on date of transition.

On transition date, the Bank is permitted to make a one-time irrevocable reassessment to fair value through profit and loss its financial assets and liabilities.

##### *Hedging*

IFRS 9 also incorporates new hedge accounting rules that intend to align hedge accounting with risk management practices. IFRS 9 includes an accounting policy choice to defer the adoption of IFRS 9 hedge accounting and to continue with IAS 39 hedge accounting. The Bank has decided to exercise this accounting policy choice. However, the Bank will implement the revised hedge accounting disclosures that are required by the IFRS 9 related amendments to IFRS 7 "Financial Instruments: Disclosures" in the 2018 Annual Report.

##### *Impairment*

The standard introduces a new single model for the measurement of impairment losses on all financial assets including loans and debt securities measured at amortized cost or at fair value through OCI. The IFRS 9 expected credit loss (ECL) model replaces the current "incurred loss" model of IAS 39.

The ECL model contains a three stage approach which is based on the change in credit quality of financial assets since initial recognition. Under Stage 1, where there has not been a significant increase in credit risk since initial recognition, an amount equal to 12 months ECL will be recorded. Under Stage 2, where there has been a significant increase in credit risk since initial recognition but the financial instruments are not considered credit impaired, an amount equal to the default probability weighted lifetime ECL will be recorded.

Under the Stage 3, where there is objective evidence of impairment at the reporting date these financial instruments will be classified as credit impaired and an amount equal to the lifetime ECL will be recorded for the financial assets.

The ECL model is forward looking and requires the use of reasonable and supportable forecasts of future economic conditions in the determination of significant increases in credit risk and measurement of ECL.

The Bank has also modified its definition of impaired financial instruments (Stage 3) for certain categories of financial instruments to make it consistent with the definitions used in the calculation of regulatory capital. As well, certain allowances for credit losses currently ascribed to impaired loans will be ascribed against Stage 1 and Stage 2 exposures.

#### *Transition impact*

The Bank will record an adjustment to its opening November 1, 2017 retained earnings and AOCI, to reflect the application of the new requirements of *Impairment* and *Classification and Measurement* at the adoption date and will not restate comparative periods.

The Bank estimates the IFRS 9 transition amount will reduce shareholders' equity by approximately \$600 million after-tax and the Common Equity Tier 1 capital ratio by approximately 15 basis points as at November 1, 2017. The estimated impact relates primarily to the implementation of the ECL requirements in the Bank. The Bank continues to revise, refine and validate the impairment models and related process controls leading up to the January 31, 2018 reporting.

#### *Financial instruments: disclosures (IFRS 7)*

IFRS 7 *Financial Instruments: Disclosures*, has been amended to include more extensive qualitative and quantitative disclosure relating to IFRS 9 such as new classification categories, three stage impairment model, new hedge accounting requirements and transition provisions.

Effective November 1, 2018

#### **Revenue from contracts with customers**

On May 28, 2014, the IASB issued IFRS 15 *Revenue from Contracts with Customers*, 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 to recognize revenue as performance obligations in a contract are satisfied. The standard scopes out contracts that are considered to be lease contracts, insurance contracts and financial instruments, and as such will impact the businesses that earn fee and commission revenue.

On April 12, 2016, the IASB issued amendments to IFRS 15 *Revenue from Contracts with Customers*. The amendments provide additional clarification on the identification of a performance obligation in a contract, determining the principal and agent in an agreement, and determining whether licensing revenues should be recognized at a point in time or over a specific period. The amendments also provide additional practical expedients that can be used on transition to the standard.

The Bank will adopt the standard and its amendments as of November 1, 2018 and plans to use 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. Additional disclosures will be required in order to explain any significant changes between reported results and results had the previous revenue standard been applied.

The standard does not apply to revenue associated with financial instruments, and therefore, will not impact the majority of the Bank's revenue, including interest income, interest expense, trading revenue and securities gains which are covered under IFRS 9 *Financial Instruments*. The implementation of the standard is being led by the Finance Department in coordination with the business segments. The areas of focus for the Bank's assessment of impact are fees and commission revenues from wealth management and banking services in Canadian and International Banking. The Bank has been working to identify and review the customer contracts within the scope of the new standard. While the assessment is not complete, the timing of the Bank's revenue recognition of fees and commissions within the scope of this standard is not expected to materially change. The classification of certain contract costs (whether presented gross or offset against non-interest income) continues to be evaluated and the final interpretation may impact the presentation of certain contract costs. The Bank is also evaluating the additional disclosures that may be relevant and required.

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, with early adoption permitted from the date the Bank applies IFRS 15 *Revenue from Contracts with Customers* on or before the date of initial application of IFRS 16. 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 assessing the impact of this new standard.

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. The standard is effective for the Bank on November 1, 2021. The Bank will assess the impact of adopting this new standard.

## 5 Cash and Deposits with Financial Institutions

As at October 31 (\$ millions)

	2017	2016
Cash and non-interest-bearing deposits with financial institutions	<b>\$ 7,825</b>	\$ 6,855
Interest-bearing deposits with financial institutions	<b>51,838</b>	39,489
<b>Total</b>	<b>\$ 59,663</b>	\$ 46,344

The Bank is required to maintain balances with central banks, other regulatory authorities and certain counterparties and these amounted to \$7,282 million (2016 – \$7,616 million).

## 6 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. Quoted market prices 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 155.

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 quoted prices in active markets, where available. 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 prices from independent market data providers or third-party broker quotes. 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 quoted prices in active markets, where available. Where equity securities are less frequently traded, the most recent exchange-quoted pricing is used to determine fair value. 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 and hedge funds

The fair value of income funds and hedge funds is based on observable quoted prices where available. 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. These inputs are not considered observable because the Bank cannot redeem these funds at Net Asset Value (Level 3).

#### Derivatives

Fair values of exchange-traded derivatives are based on quoted market prices. 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 deposit notes containing embedded features that are bifurcated from the deposit 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.

As at October 31 (\$ millions)	2017			2016		
	Total fair value	Total carrying value	Favourable/ (Unfavourable)	Total fair value	Total carrying value	Favourable/ (Unfavourable)
<b>Assets:</b>						
Cash and deposits with financial institutions	\$ 59,663	\$ 59,663	\$ –	\$ 46,344	\$ 46,344	\$ –
Trading assets	98,464	98,464	–	108,561	108,561	–
Financial instruments designated at fair value through profit or loss	13	13	–	221	221	–
Securities purchased under resale agreements and securities borrowed	95,319	95,319	–	92,129	92,129	–
Derivative financial instruments	35,364	35,364	–	41,657	41,657	–
Investment securities – available-for-sale	50,504	50,504	–	50,509	50,509	–
Investment securities – held-to-maturity	18,716	18,765	(49)	22,567	22,410	157
Loans	507,276	504,369	2,907	484,815	480,164	4,651
Customers' liability under acceptances	13,560	13,560	–	11,978	11,978	–
Other financial assets	9,314	9,314	–	9,973	9,973	–
<b>Liabilities:</b>						
Deposits	625,964	625,367	(597)	613,858	611,877	(1,981)
Financial instruments designated at fair value through profit or loss	4,663	4,663	–	1,459	1,459	–
Acceptances	13,560	13,560	–	11,978	11,978	–
Obligations related to securities sold short	30,766	30,766	–	23,312	23,312	–
Derivative financial instruments	34,200	34,200	–	42,387	42,387	–
Obligations related to securities sold under repurchase agreements and securities lent	95,843	95,843	–	97,083	97,083	–
Subordinated debentures	6,105	5,935	(170)	7,804	7,633	(171)
Other financial liabilities	27,531	27,118	(413)	24,304	23,796	(508)

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 available-for-sale investment securities, derivatives and financial instruments held for trading purposes or designated as fair value through profit and 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.

As at October 31 (\$ millions)	2017				2016			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
<b>Instruments carried at fair value on a recurring basis:</b>								
<b>Assets:</b>								
Precious metals <sup>(1)</sup>	\$ –	\$ 5,717	\$ –	\$ 5,717	\$ –	\$ 8,442	\$ –	\$ 8,442
<b>Trading assets</b>								
Loans	–	17,312	–	17,312	–	19,421	–	19,421
Canadian federal government and government guaranteed debt	10,343	–	–	10,343	10,830	–	–	10,830
Canadian provincial and municipal debt	–	7,325	–	7,325	–	9,608	–	9,608
US treasury and other US agencies' debt	6,894	–	–	6,894	10,182	–	–	10,182
Other foreign governments' debt	5,680	1,149	–	6,829	4,724	1,783	–	6,507
Corporate and other debt	44	7,920	22	7,986	75	9,844	31	9,950
Income funds	180	165	–	345	1,424	648	1,186	3,258
Equity securities	38,760	170	–	38,930	36,814	133	5	36,952
Other <sup>(2)</sup>	2,500	–	–	2,500	1,853	–	–	1,853
	<b>\$ 64,401</b>	<b>\$ 39,758</b>	<b>\$ 22</b>	<b>\$ 104,181</b>	<b>\$ 65,902</b>	<b>\$ 49,879</b>	<b>\$ 1,222</b>	<b>\$ 117,003</b>
<b>Financial assets designated at fair value through profit or loss</b>								
	<b>\$ 13</b>	<b>\$ –</b>	<b>\$ –</b>	<b>\$ 13</b>	<b>\$ 16</b>	<b>\$ 205</b>	<b>\$ –</b>	<b>\$ 221</b>
<b>Investment securities<sup>(3)</sup></b>								
Canadian federal government and government guaranteed debt	9,677	2,416	–	12,093	11,464	2,157	–	13,621
Canadian provincial and municipal debt	593	4,230	–	4,823	934	2,558	–	3,492
US treasury and other US agencies' debt	6,305	367	–	6,672	9,901	176	–	10,077
Other foreign governments' debt	10,944	8,746	113	19,803	6,703	8,473	355	15,531
Corporate and other debt	750	3,584	53	4,387	745	3,852	81	4,678
Mortgage-backed securities	539	876	–	1,415	276	751	–	1,027
Equity securities	590	177	544	1,311	1,411	199	473	2,083
	<b>\$ 29,398</b>	<b>\$ 20,396</b>	<b>\$ 710</b>	<b>\$ 50,504</b>	<b>\$ 31,434</b>	<b>\$ 18,166</b>	<b>\$ 909</b>	<b>\$ 50,509</b>
<b>Derivative financial instruments</b>								
Interest rate contracts	\$ –	\$ 9,742	\$ 36	\$ 9,778	\$ –	\$ 15,653	\$ 54	\$ 15,707
Foreign exchange and gold contracts	4	21,496	–	21,500	17	21,642	–	21,659
Equity contracts	615	1,720	–	2,335	321	1,546	64	1,931
Credit contracts	–	175	–	175	–	148	–	148
Commodity contracts	133	1,443	–	1,576	321	1,891	–	2,212
	<b>\$ 752</b>	<b>\$ 34,576</b>	<b>\$ 36</b>	<b>\$ 35,364</b>	<b>\$ 659</b>	<b>\$ 40,880</b>	<b>\$ 118</b>	<b>\$ 41,657</b>
<b>Liabilities:</b>								
Deposits <sup>(4)</sup>	\$ –	\$ (7)	\$ –	\$ (7)	\$ –	\$ (36)	\$ 1,163	\$ 1,127
<b>Financial liabilities designated at fair value through profit or loss</b>								
	–	4,663	–	4,663	–	1,459	–	1,459
<b>Obligations related to securities sold short</b>								
	27,796	2,970	–	30,766	19,870	3,442	–	23,312
<b>Derivative financial instruments</b>								
Interest rate contracts	–	10,823	267	11,090	–	14,299	187	14,486
Foreign exchange and gold contracts	3	17,646	–	17,649	3	21,640	–	21,643
Equity contracts	502	2,724	7	3,233	327	1,886	167	2,380
Credit contracts	–	179	–	179	–	1,475	–	1,475
Commodity contracts	268	1,781	–	2,049	312	2,091	–	2,403
	<b>\$ 773</b>	<b>\$ 33,153</b>	<b>\$ 274</b>	<b>\$ 34,200</b>	<b>\$ 642</b>	<b>\$ 41,391</b>	<b>\$ 354</b>	<b>\$ 42,387</b>
<b>Instruments not carried at fair value<sup>(5)</sup>:</b>								
<b>Assets:</b>								
Investment securities – Held to maturity	\$ 4,240	\$ 14,476	\$ –	\$ 18,716	\$ 4,972	\$ 17,595	\$ –	\$ 22,567
Loans <sup>(6)</sup>	–	–	286,621	286,621	–	–	276,462	276,462
<b>Liabilities:</b>								
Deposits <sup>(6)(7)</sup>	–	266,995	–	266,995	–	271,170	–	271,170
Subordinated debt	–	6,105	–	6,105	–	7,804	–	7,804
Other liabilities	–	13,363	–	13,363	–	11,303	–	11,303

(1) The fair value of precious metals is determined based on quoted market prices and forward spot prices.

(2) Consists primarily of base metal positions. The fair value of these positions is determined based on quoted prices in active markets.

(3) Excludes investments which are held-to-maturity of \$18,765 (2016 – \$22,410).

(4) These amounts represent embedded derivatives bifurcated from structured deposit notes.

(5) Represents the fair value of financial assets and liabilities where the carrying amount is not a reasonable approximation of fair value.

(6) Excludes floating rate instruments as carrying value approximates fair value.

(7) Excludes embedded derivatives bifurcated from structured deposit notes.

**Level 3 instrument fair value changes**

Financial instruments categorized as Level 3 as at October 31, 2017, in the fair value hierarchy comprise certain 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, 2017.

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.

(\$ millions)	As at October 31, 2017						Fair value October 31 2017	Change in unrealized gains/(losses) recorded in income for instruments still held <sup>(3)</sup>
	Fair value November 1 2016	Gains/(losses) recorded in income <sup>(1)</sup>	Gains/(losses) recorded in OCI <sup>(2)</sup>	Purchases/ Issuances	Sales/ Settlements	Transfers into/out of Level 3		
<b>Trading assets<sup>(4)</sup></b>								
Corporate and other debt	\$ 31	\$ (9)	\$ –	\$ –	\$ –	\$ –	\$ 22	\$ (9)
Income funds	1,186	(6)	–	–	(1,180)	–	–	–
Equity securities	5	(5)	–	–	–	–	–	–
	1,222	(20)	–	–	(1,180)	–	22	(9)
<b>Investment securities</b>								
Other foreign governments' debt	355	6	(8)	–	(240)	–	113	n/a
Corporate and other debt	81	3	(8)	13	(33)	(3)	53	n/a
Equity securities	473	(33)	54	109	(59)	–	544	n/a
	909	(24)	38	122	(332)	(3)	710	n/a
<b>Derivative financial instruments – assets</b>								
Interest rate contracts	54	(33)	–	36	(21)	–	36	(36)
Equity contracts	64	108	–	9	(46)	(135)	–	–
<b>Derivative financial instruments – liabilities</b>								
Interest rate contracts	(187)	(67)	–	(45)	32	–	(267)	(68) <sup>(6)</sup>
Equity contracts	(167)	2	–	(6)	38	126	(7)	(8) <sup>(5)</sup>
	(236)	10	–	(6)	3	(9)	(238)	(112)
<b>Deposits<sup>(7)</sup></b>	(1,163)	6	–	–	1,157	–	–	–
<b>Total</b>	\$ 732	\$ (28)	\$ 38	\$ 116	\$ (352)	\$ (12)	\$ 494	\$ (121)

(1) Gains and losses on trading assets and all derivative financial instruments are included in trading revenues in the Consolidated Statement of Income. Gains and losses on disposal of investment securities are included in net gain on sale of investment securities in the Consolidated Statement of Income.

(2) Gains and losses from fair value changes of investment securities are presented in the net change in unrealized gains (losses) on available-for-sale securities in the Consolidated Statement of Comprehensive Income.

(3) 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.

(4) Trading assets include an insignificant amount of financial assets designated at fair value through profit or loss.

(5) 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.

(6) Certain unrealized losses on interest rate derivative contracts are largely offset by mark-to-market changes on embedded derivatives on certain deposit notes in the Consolidated Statement of Income.

(7) These amounts represent embedded derivatives bifurcated from structured deposit notes.

The following table summarizes the changes in Level 3 instruments carried at fair value for the year ended October 31, 2016.

(\$ millions)	As at October 31, 2016						Fair value October 31 2016
	Fair value November 1 2015	Gains/(losses) recorded in income <sup>(1)</sup>	Gains/(losses) recorded in OCI	Purchases/ Issuances	Sales/ Settlements	Transfers into/out of Level 3	
<b>Trading assets<sup>(2)</sup></b>	\$ 1,315	\$ (22)	\$ –	\$ –	\$ (71)	\$ –	\$ 1,222
Investment securities	1,740	195	(217)	706	(1,515)	–	909
Derivative financial instruments	(125)	(85)	–	(139)	147	(34)	(236)
Deposits <sup>(3)</sup>	(1,192)	29	–	–	–	–	(1,163)

(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) Trading assets include an insignificant amount of financial assets designated at fair value through profit or loss.

(3) These amounts represent embedded derivatives bifurcated from structured deposit notes.

### 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.

The following significant transfers were made among Levels 1, 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 was 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.

The following significant transfers were made among Levels 1, 2 and 3 for the year ended October 31, 2016:

A net amount of derivative assets of \$162 million was transferred into Level 3 from Level 2 for equity derivatives. A net amount of derivative liabilities of \$196 million was transferred into Level 3 from Level 2 primarily for equity derivatives.

All transfers were as a result of new information being obtained regarding the observability of inputs used in the valuation.

### 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 <sup>(1)</sup>	Changes in fair value from reasonably possible alternatives (\$ millions)
<b>Derivative financial instruments</b>				
Interest rate contracts	Option pricing model	Interest rate volatility	9% - 212%	(35)/35
Equity contracts	Option pricing model	Equity volatility Single stock correlation	4% - 95% (77)% - 97%	(6)/6

(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.

## 7 Trading Assets

### (a) Trading securities

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

As at October 31, 2017 (\$ millions)	Remaining term to maturity						Carrying value
	Within three months	Three to twelve months	One to five years	Five to ten years	Over ten years	No specific maturity	
<b>Trading securities:</b>							
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
<b>Total</b>	<b>\$ 3,995</b>	<b>\$ 5,756</b>	<b>\$ 16,538</b>	<b>\$ 7,036</b>	<b>\$ 6,052</b>	<b>\$ 39,275</b>	<b>\$ 78,652</b>
<b>Total by currency (in Canadian equivalent):</b>							
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
<b>Total trading securities</b>	<b>\$ 3,995</b>	<b>\$ 5,756</b>	<b>\$ 16,538</b>	<b>\$ 7,036</b>	<b>\$ 6,052</b>	<b>\$ 39,275</b>	<b>\$ 78,652</b>

As at October 31, 2016 (\$ millions)	Remaining term to maturity						Carrying value
	Within three months	Three to twelve months	One to five years	Five to ten years	Over ten years	No specific maturity	
<b>Trading securities:</b>							
Canadian federal government issued or guaranteed debt	\$ 235	\$ 2,620	\$ 4,651	\$ 1,079	\$ 2,245	\$ –	\$ 10,830
Canadian provincial and municipal debt	1,713	950	1,483	2,907	2,555	–	9,608
U.S. treasury and other U.S. agency debt	2,688	400	4,304	957	1,833	–	10,182
Other foreign government debt	1,346	760	1,924	1,369	1,108	–	6,507
Common shares	–	–	–	–	–	40,210	40,210
Other	913	1,504	4,853	1,693	987	–	9,950
<b>Total</b>	<b>\$ 6,895</b>	<b>\$ 6,234</b>	<b>\$ 17,215</b>	<b>\$ 8,005</b>	<b>\$ 8,728</b>	<b>\$ 40,210</b>	<b>\$ 87,287</b>
<b>Total by currency (in Canadian equivalent):</b>							
Canadian dollar	\$ 2,161	\$ 3,714	\$ 6,832	\$ 4,442	\$ 5,185	\$ 15,033	\$ 37,367
U.S. dollar	3,199	1,502	7,792	2,156	2,448	8,178	25,275
Mexican peso	176	82	160	6	8	1,536	1,968
Other currencies	1,359	936	2,431	1,401	1,087	15,463	22,677
<b>Total trading securities</b>	<b>\$ 6,895</b>	<b>\$ 6,234</b>	<b>\$ 17,215</b>	<b>\$ 8,005</b>	<b>\$ 8,728</b>	<b>\$ 40,210</b>	<b>\$ 87,287</b>

### (b) Trading loans

The following table provides the geographic breakdown of trading loans:

As at October 31 (\$ millions)	2017	2016
<b>Trading loans<sup>(1)(2)</sup></b>		
U.S. <sup>(3)</sup>	\$ 10,654	\$ 11,235
Europe <sup>(4)</sup>	3,824	4,163
Asia Pacific <sup>(4)</sup>	1,605	2,555
Canada <sup>(4)</sup>	376	340
Other <sup>(4)</sup>	853	1,128
<b>Total</b>	<b>\$ 17,312</b>	<b>\$ 19,421</b>

(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 \$7,390 (2016 – \$7,098), 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.

## 8 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 deposit 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 instrument contains one or more embedded derivatives that are not closely related to the host contract. Changes in fair value arising from changes in 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.

October 31 (\$ millions)	Fair value		Change in fair value		Cumulative change in FV <sup>(1)</sup>	
	As at		For the year ended			
	2017	2016	2017	2016	2017	2016
Investment securities <sup>(2)</sup>	\$ 13	\$ 16	\$ –	\$ (1)	\$ 11	\$ 11
Loans <sup>(3)</sup>	–	205	(205)	(9)	(197)	8
Deposit note liabilities <sup>(4)</sup>	4,663	1,459	103	245	(91)	15

(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.

	Deposit Note Liabilities				
	Contractual maturity amount <sup>(1)</sup>	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 <sup>(1)</sup>
As at October 31, 2017	\$ 4,572	\$ 4,663	\$ (91)	\$ (28)	\$ (36)
As at October 31, 2016	\$ 1,474	\$ 1,459	\$ 15	\$ (23)	\$ (8)

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

**9 Derivative Financial Instruments**
**(a) Notional amounts<sup>(1)</sup>**

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.

As at October 31 (\$ millions)	2017			2016		
	Trading	Hedging	Total	Trading	Hedging	Total
<b>Interest rate contracts</b>						
Exchange-traded:						
Futures	\$ 161,590	\$ –	\$ 161,590	\$ 112,196	\$ –	\$ 112,196
Options purchased	5,474	–	5,474	15,427	–	15,427
Options written	2,894	–	2,894	3,283	–	3,283
	<b>169,958</b>	<b>–</b>	<b>169,958</b>	<b>130,906</b>	<b>–</b>	<b>130,906</b>
Over-the-counter:						
Forward rate agreements	208	–	208	1,721	–	1,721
Swaps	441,607	18,609	460,216	479,029	25,537	504,566
Options purchased	34,190	–	34,190	35,404	–	35,404
Options written	38,099	–	38,099	36,864	–	36,864
	<b>514,104</b>	<b>18,609</b>	<b>532,713</b>	<b>553,018</b>	<b>25,537</b>	<b>578,555</b>
Over-the-counter (settled through central counterparties):						
Forward rate agreements	329,853	–	329,853	308,186	–	308,186
Swaps	2,236,148	106,979	2,343,127	1,702,488	87,480	1,789,968
Options purchased	–	–	–	–	–	–
Options written	–	–	–	–	–	–
	<b>2,566,001</b>	<b>106,979</b>	<b>2,672,980</b>	<b>2,010,674</b>	<b>87,480</b>	<b>2,098,154</b>
<b>Total</b>	<b>\$ 3,250,063</b>	<b>\$ 125,588</b>	<b>\$ 3,375,651</b>	<b>\$ 2,694,598</b>	<b>\$ 113,017</b>	<b>\$ 2,807,615</b>
<b>Foreign exchange and gold contracts</b>						
Exchange-traded:						
Futures	\$ 32,452	\$ –	\$ 32,452	\$ 35,862	\$ –	\$ 35,862
Options purchased	16	–	16	257	–	257
Options written	481	–	481	–	–	–
	<b>32,949</b>	<b>–</b>	<b>32,949</b>	<b>36,119</b>	<b>–</b>	<b>36,119</b>
Over-the-counter:						
Spot and forwards	427,112	21,623	448,735	425,033	24,244	449,277
Swaps	321,567	63,300	384,867	302,107	51,355	353,462
Options purchased	39,100	–	39,100	16,359	–	16,359
Options written	39,547	–	39,547	16,245	–	16,245
	<b>827,326</b>	<b>84,923</b>	<b>912,249</b>	<b>759,744</b>	<b>75,599</b>	<b>835,343</b>
Over-the-counter (settled through central counterparties):						
Spot and forwards	–	–	–	13	–	13
Swaps	–	–	–	–	–	–
Options purchased	–	–	–	–	–	–
Options written	–	–	–	–	–	–
	<b>–</b>	<b>–</b>	<b>–</b>	<b>13</b>	<b>–</b>	<b>13</b>
<b>Total</b>	<b>\$ 860,275</b>	<b>\$ 84,923</b>	<b>\$ 945,198</b>	<b>\$ 795,876</b>	<b>\$ 75,599</b>	<b>\$ 871,475</b>
<b>Other derivative contracts</b>						
Exchange-traded:						
Equity	\$ 33,287	\$ –	\$ 33,287	\$ 19,625	\$ –	\$ 19,625
Credit	–	–	–	–	–	–
Commodity and other contracts	45,938	–	45,938	41,888	–	41,888
	<b>79,225</b>	<b>–</b>	<b>79,225</b>	<b>61,513</b>	<b>–</b>	<b>61,513</b>
Over-the-counter:						
Equity	64,444	796	65,240	67,604	679	68,283
Credit	26,737	–	26,737	37,910	–	37,910
Commodity and other contracts	34,715	–	34,715	36,508	–	36,508
	<b>125,896</b>	<b>796</b>	<b>126,692</b>	<b>142,022</b>	<b>679</b>	<b>142,701</b>
Over-the-counter (settled through central counterparties):						
Equity	2,863	–	2,863	–	–	–
Credit	10,855	–	10,855	11,148	–	11,148
Commodity and other contracts	6,762	–	6,762	357	–	357
	<b>20,480</b>	<b>–</b>	<b>20,480</b>	<b>11,505</b>	<b>–</b>	<b>11,505</b>
<b>Total</b>	<b>\$ 225,601</b>	<b>\$ 796</b>	<b>\$ 226,397</b>	<b>\$ 215,040</b>	<b>\$ 679</b>	<b>\$ 215,719</b>
<b>Total notional amounts outstanding</b>	<b>\$ 4,335,939</b>	<b>\$ 211,307</b>	<b>\$ 4,547,246</b>	<b>\$ 3,705,514</b>	<b>\$ 189,295</b>	<b>\$ 3,894,809</b>

(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, 2017 (\$ millions)	Within one year	One to five years	Over five years	Total
<b>Interest rate contracts</b>				
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
	<b>1,331,716</b>	<b>1,359,988</b>	<b>683,947</b>	<b>3,375,651</b>
<b>Foreign exchange and gold contracts</b>				
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
	<b>576,638</b>	<b>265,975</b>	<b>102,585</b>	<b>945,198</b>
<b>Other derivative contracts</b>				
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
	<b>142,485</b>	<b>78,807</b>	<b>5,105</b>	<b>226,397</b>
<b>Total</b>	<b>\$ 2,050,839</b>	<b>\$ 1,704,770</b>	<b>\$ 791,637</b>	<b>\$ 4,547,246</b>
<b>As at October 31, 2016 (\$ millions)</b>				
	Within one year	One to five years	Over five years	Total
<b>Interest rate contracts</b>				
Futures	\$ 112,183	\$ –	\$ 13	\$ 112,196
Forward rate agreements	279,035	30,872	–	309,907
Swaps	663,184	1,114,988	516,362	2,294,534
Options purchased	13,169	29,392	8,270	50,831
Options written	6,956	24,700	8,491	40,147
	<b>1,074,527</b>	<b>1,199,952</b>	<b>533,136</b>	<b>2,807,615</b>
<b>Foreign exchange and gold contracts</b>				
Futures	858	35,004	–	35,862
Spot and forwards	400,914	47,590	786	449,290
Swaps	61,029	203,554	88,879	353,462
Options purchased	8,375	8,241	–	16,616
Options written	9,690	6,555	–	16,245
	<b>480,866</b>	<b>300,944</b>	<b>89,665</b>	<b>871,475</b>
<b>Other derivative contracts</b>				
Equity	63,485	24,265	158	87,908
Credit	22,911	22,852	3,295	49,058
Commodity and other contracts	37,001	41,612	140	78,753
	<b>123,397</b>	<b>88,729</b>	<b>3,593</b>	<b>215,719</b>
<b>Total</b>	<b>\$ 1,678,790</b>	<b>\$ 1,589,625</b>	<b>\$ 626,394</b>	<b>\$ 3,894,809</b>

**(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, 2017. 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 70 of the 2017 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.

As at October 31 (\$ millions)	2017				2016			
	Notional amount	Credit risk amount (CRA) <sup>(1)</sup>	Credit equivalent amount (CEA) <sup>(1)</sup>	CET1 Risk Weighted Assets <sup>(2)</sup>	Notional amount	Credit risk amount (CRA) <sup>(1)</sup>	Credit equivalent amount (CEA) <sup>(1)</sup>	CET1 Risk Weighted Assets <sup>(2)</sup>
<b>Interest rate contracts</b>								
Futures	\$ 161,590	\$ –	\$ 65	\$ –	\$ 112,196	\$ –	\$ –	\$ –
Forward rate agreements	330,061	20	30	20	309,907	9	100	17
Swaps	2,803,343	250	5,459	1,341	2,294,534	2,703	7,331	2,125
Options purchased	39,664	5	105	57	50,831	6	107	52
Options written	40,993	–	15	3	40,147	–	1	–
	<b>3,375,651</b>	<b>275</b>	<b>5,674</b>	<b>1,421</b>	<b>2,807,615</b>	<b>2,718</b>	<b>7,539</b>	<b>2,194</b>
<b>Foreign exchange and gold contracts</b>								
Futures	32,452	–	56	–	35,862	–	38	16
Spot and forwards	448,735	2,370	6,311	1,765	449,290	2,057	5,420	1,326
Swaps	384,867	4,023	7,297	1,898	353,462	2,596	5,919	1,585
Options purchased	39,116	523	515	113	16,616	322	532	129
Options written	40,028	–	83	12	16,245	–	127	19
	<b>945,198</b>	<b>6,916</b>	<b>14,262</b>	<b>3,788</b>	<b>871,475</b>	<b>4,975</b>	<b>12,036</b>	<b>3,075</b>
<b>Other derivative contracts</b>								
Equity	101,390	45	5,123	1,575	87,908	871	5,308	1,677
Credit	37,592	12	1,421	174	49,058	32	2,032	340
Commodity and other contracts	87,415	9	10,953	807	78,753	1,109	6,493	645
	<b>226,397</b>	<b>66</b>	<b>17,497</b>	<b>2,556</b>	<b>215,719</b>	<b>2,012</b>	<b>13,833</b>	<b>2,662</b>
Credit Valuation Adjustment <sup>(2)</sup>	–	–	–	2,988	–	–	–	4,165
<b>Total derivatives</b>	<b>\$ 4,547,246</b>	<b>\$ 7,257</b>	<b>\$ 37,433</b>	<b>\$ 10,753</b>	<b>\$ 3,894,809</b>	<b>\$ 9,705</b>	<b>\$ 33,408</b>	<b>\$ 12,096</b>
<b>Amount settled through central counterparties<sup>(3)</sup></b>								
Exchange-traded	282,132	–	10,385	208	228,538	–	5,521	110
Over-the-counter	2,693,460	–	1,334	27	2,109,672	–	2,174	43
	<b>\$ 2,975,592</b>	<b>\$ –</b>	<b>\$ 11,719</b>	<b>\$ 235</b>	<b>\$ 2,338,210</b>	<b>\$ –</b>	<b>\$ 7,695</b>	<b>\$ 153</b>

(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 \$28,107 (2016 – \$31,952) for CRA, and \$51,623 (2016 – \$51,072) for CEA.

(2) As per OSFI guideline, effective 2014, Credit Valuation Adjustment (CVA) to CET1 RWA for derivatives was phased-in. In 2017, the CVA was 0.72 (2016 – 0.64).

(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)	2017		2017		2016	
	Average fair value		Year-end fair value		Year-end fair value <sup>(1)</sup>	
	Favourable	Unfavourable	Favourable	Unfavourable	Favourable	Unfavourable
<b>Trading</b>						
<b>Interest rate contracts</b>						
Forward rate agreements	\$ 35	\$ 2	\$ 27	\$ 1	\$ 63	\$ 3
Swaps	9,809	11,484	8,895	10,330	14,153	13,814
Options	75	101	53	75	65	82
	<b>9,919</b>	<b>11,587</b>	<b>8,975</b>	<b>10,406</b>	<b>14,281</b>	<b>13,899</b>
<b>Foreign exchange and gold contracts</b>						
Forwards	5,786	5,907	5,973	5,223	5,939	5,362
Swaps	10,589	10,134	10,945	8,774	11,506	12,369
Options	678	618	730	681	410	325
	<b>17,053</b>	<b>16,659</b>	<b>17,648</b>	<b>14,678</b>	<b>17,855</b>	<b>18,056</b>
<b>Other derivative contracts</b>						
Equity	2,010	3,129	2,274	3,233	1,905	2,380
Credit	109	429	175	179	148	1,475
Commodity and other contracts	1,689	2,228	1,576	2,049	2,212	2,403
	<b>3,808</b>	<b>5,786</b>	<b>4,025</b>	<b>5,461</b>	<b>4,265</b>	<b>6,258</b>
Trading derivatives' market valuation	<b>\$ 30,780</b>	<b>\$ 34,032</b>	<b>\$ 30,648</b>	<b>\$ 30,545</b>	<b>\$ 36,401</b>	<b>\$ 38,213</b>
<b>Hedging</b>						
<b>Interest rate contracts</b>						
Swaps			\$ 803	\$ 684	\$ 1,426	\$ 587
<b>Foreign exchange and gold contracts</b>						
Forwards			634	215	333	241
Swaps			3,218	2,756	3,471	3,346
			<b>\$ 3,852</b>	<b>\$ 2,971</b>	<b>\$ 3,804</b>	<b>\$ 3,587</b>
<b>Other derivative contracts</b>						
Equity			\$ 61	\$ –	\$ 26	\$ –
Hedging derivatives' market valuation			<b>\$ 4,716</b>	<b>\$ 3,655</b>	<b>\$ 5,256</b>	<b>\$ 4,174</b>
Total derivative financial instruments as per Statement of Financial Position			<b>\$ 35,364</b>	<b>\$ 34,200</b>	<b>\$ 41,657</b>	<b>\$ 42,387</b>
Less: impact of master netting and collateral <sup>(2)</sup>			<b>28,107</b>	<b>28,107</b>	31,952	31,952
Net derivative financial instruments <sup>(2)</sup>			<b>\$ 7,257</b>	<b>\$ 6,093</b>	<b>\$ 9,705</b>	<b>\$ 10,435</b>

(1) The average fair value of trading derivatives' market valuation for the year ended October 31, 2016 was: favourable \$38,623 and unfavourable \$42,651. 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's hedging activities that qualify for hedge accounting consist of fair value hedges, cash flow hedges, and net investment hedges.

**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	2016
<b>Fair value hedges</b>		
Gain (loss) recorded on hedged items	\$ 574	\$ 11
Gain (loss) recorded on hedging instruments	(588)	(51)
Ineffectiveness	\$ (14)	\$ (40)
<b>Cash flow hedges</b>		
Ineffectiveness	\$ 24	\$ 11

**Hedging instruments**

Market valuation is disclosed by the type of relationship:

As at October 31 (\$ millions)	2017		2016	
	Favourable	Unfavourable	Favourable	Unfavourable
Derivatives designated in fair value hedging relationships <sup>(1)</sup>	\$ 687	\$ 751	\$ 1,622	\$ 643
Derivatives designated in cash flow hedging relationships	3,746	2,749	3,568	3,291
Derivatives designated in net investment hedging relationships <sup>(1)</sup>	283	155	66	240
Total derivatives designated in hedging relationships	<b>\$ 4,716</b>	<b>\$ 3,655</b>	<b>\$ 5,256</b>	<b>\$ 4,174</b>

(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)

As at October 31, 2016 (\$ millions)	Within one year	Within one to five years	More than five years
Cash inflows from assets	\$ 12,672	\$ 26,838	\$ 8,998
Cash outflows from liabilities	(22,187)	(30,870)	(7,666)
Net cash flows	\$ (9,515)	\$ (4,032)	\$ 1,332

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.

**10 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.

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 <sup>(1)</sup>	Collateral <sup>(2)</sup>	Net amount <sup>(3)</sup>
Derivative financial instruments <sup>(4)</sup>	\$ 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
<b>Total</b>	<b>\$ 156,233</b>	<b>\$ (25,550)</b>	<b>\$ 130,683</b>	<b>\$ (34,049)</b>	<b>\$ (81,590)</b>	<b>\$ 15,044</b>

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 <sup>(1)</sup>	Collateral <sup>(2)</sup>	Net amount
Derivative financial instruments <sup>(4)</sup>	\$ 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
<b>Total</b>	<b>\$ 155,593</b>	<b>\$ (25,550)</b>	<b>\$ 130,043</b>	<b>\$ (34,049)</b>	<b>\$ (77,011)</b>	<b>\$ 18,983</b>

- (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 market of derivative financial instruments of \$1,112 are recorded within other liabilities and other assets, respectively.

As at October 31, 2016 (\$ 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 <sup>(1)</sup>	Collateral <sup>(2)</sup>	Net amount <sup>(3)</sup>
Derivative financial instruments <sup>(4)</sup>	\$ 63,329	\$ (21,672)	\$ 41,657	\$ (25,115)	\$ (7,184)	\$ 9,358
Securities purchased under resale agreements and securities borrowed	98,909	(6,780)	92,129	(9,447)	(75,365)	7,317
<b>Total</b>	<b>\$ 162,238</b>	<b>\$ (28,452)</b>	<b>\$ 133,786</b>	<b>\$ (34,562)</b>	<b>\$ (82,549)</b>	<b>\$ 16,675</b>

As at October 31, 2016 (\$ 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 <sup>(1)</sup>	Collateral <sup>(2)</sup>	Net amount
Derivative financial instruments <sup>(4)</sup>	\$ 64,059	\$ (21,672)	\$ 42,387	\$ (25,115)	\$ (7,318)	\$ 9,954
Obligations related to securities sold under repurchase agreements and securities lent	103,863	(6,780)	97,083	(9,447)	(73,929)	13,707
<b>Total</b>	<b>\$ 167,922</b>	<b>\$ (28,452)</b>	<b>\$ 139,470</b>	<b>\$ (34,562)</b>	<b>\$ (81,247)</b>	<b>\$ 23,661</b>

(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 2016, the cash collateral received against the positive market values of derivative financial instruments of \$1,398 and the cash collateral pledged towards the negative mark to market of derivative financial instruments of \$875 are recorded within other liabilities and other assets, respectively.

## 11 Investment Securities

Investment securities includes held-to-maturity securities and available-for-sale securities.

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

As at October 31, 2017 (\$ millions)	Remaining term to maturity						Carrying value
	Within three months	Three to twelve months	One to five years	Five to ten years	Over ten years	No specific maturity	
<b>Available-for-sale</b>							
Canadian federal government issued or guaranteed debt	\$ 8	\$ 291	\$ 9,780	\$ 905	\$ 1,109	\$ –	\$ 12,093
Yield <sup>(1)</sup> %	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 <sup>(1)</sup> %	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 <sup>(1)</sup> %	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 <sup>(1)</sup> %	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 <sup>(1)</sup> %	0.6	0.8	1.6	2.5	2.5	–	1.2
Preferred shares	–	–	–	–	–	311	311
Common shares	–	–	–	–	–	1,000	1,000
<b>Total available-for-sale securities</b>	<b>9,105</b>	<b>9,112</b>	<b>23,949</b>	<b>5,362</b>	<b>1,665</b>	<b>1,311</b>	<b>50,504</b>
<b>Held-to-maturity</b>							
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
<b>Total held-to-maturity assets</b>	<b>1,522</b>	<b>2,364</b>	<b>14,771</b>	<b>102</b>	<b>6</b>	<b>–</b>	<b>18,765</b>
<b>Total investment securities</b>	<b>\$ 10,627</b>	<b>\$ 11,476</b>	<b>\$ 38,720</b>	<b>\$ 5,464</b>	<b>\$ 1,671</b>	<b>\$ 1,311</b>	<b>\$ 69,269</b>
<b>Total by currency (in Canadian equivalent):</b>							
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
<b>Total investment securities</b>	<b>\$ 10,627</b>	<b>\$ 11,476</b>	<b>\$ 38,720</b>	<b>\$ 5,464</b>	<b>\$ 1,671</b>	<b>\$ 1,311</b>	<b>\$ 69,269</b>

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

As at October 31, 2016 (\$ millions)	Remaining term to maturity						Carrying value
	Within three months	Three to twelve months	One to five years	Five to ten years	Over ten years	No specific maturity	
<b>Available-for-sale</b>							
Canadian federal government issued or guaranteed debt	\$ 51	\$ 53	\$ 11,507	\$ 857	\$ 1,153	\$ –	\$ 13,621
Yield <sup>(1)</sup> %	0.8	1.0	1.0	2.5	3.0	–	1.3
Canadian provincial and municipal debt	–	252	2,869	352	19	–	3,492
Yield <sup>(1)</sup> %	0.0	1.0	1.4	2.1	2.9	–	1.5
U.S. treasury and other U.S. agency debt	481	2,134	5,823	1,296	343	–	10,077
Yield <sup>(1)</sup> %	0.3	0.6	1.0	0.9	1.2	–	0.9
Other foreign government debt	4,645	3,620	5,602	1,424	240	–	15,531
Yield <sup>(1)</sup> %	1.7	3.0	3.2	4.4	5.2	–	2.9
Other debt	846	1,145	3,454	81	179	–	5,705
Yield <sup>(1)</sup> %	1.7	0.1	1.4	3.0	2.5	–	1.2
Preferred shares	–	–	–	–	–	264	264
Common shares	–	–	–	–	–	1,819	1,819
<b>Total available-for-sale securities</b>	<b>6,023</b>	<b>7,204</b>	<b>29,255</b>	<b>4,010</b>	<b>1,934</b>	<b>2,083</b>	<b>50,509</b>
<b>Held-to-maturity</b>							
Canadian federal and provincial government issued or guaranteed debt	123	432	5,335	281	–	–	6,171
U.S. treasury and other U.S. agency debt	–	335	4,281	–	–	–	4,616
Other foreign government debt	–	344	2,547	7	–	–	2,898
Corporate debt	523	1,578	6,617	7	–	–	8,725
<b>Total held-to-maturity assets</b>	<b>646</b>	<b>2,689</b>	<b>18,780</b>	<b>295</b>	<b>–</b>	<b>–</b>	<b>22,410</b>
<b>Total investment securities</b>	<b>\$ 6,669</b>	<b>\$ 9,893</b>	<b>\$ 48,035</b>	<b>\$ 4,305</b>	<b>\$ 1,934</b>	<b>\$ 2,083</b>	<b>\$ 72,919</b>
<b>Total by currency (in Canadian equivalent):</b>							
Canadian dollar	\$ 8	\$ 430	\$ 16,588	\$ 1,239	\$ 1,192	\$ 721	\$ 20,178
U.S. dollar	1,485	5,146	26,959	2,086	514	930	37,120
Mexican peso	878	264	1,496	247	77	12	2,974
Other currencies	4,298	4,053	2,992	733	151	420	12,647
<b>Total investment securities</b>	<b>\$ 6,669</b>	<b>\$ 9,893</b>	<b>\$ 48,035</b>	<b>\$ 4,305</b>	<b>\$ 1,934</b>	<b>\$ 2,083</b>	<b>\$ 72,919</b>

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

(b) 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
<b>Total available-for-sale securities</b>	<b>\$ 50,545</b>	<b>\$ 381</b>	<b>\$ 422</b>	<b>\$ 50,504</b>

As at October 31, 2016 (\$ millions)	Cost	Gross unrealized gains	Gross unrealized losses	Fair value
Canadian federal government issued or guaranteed debt	\$ 13,347	\$ 280	\$ 6	\$ 13,621
Canadian provincial and municipal debt	3,469	33	10	3,492
U.S. treasury and other U.S. agency debt	10,050	53	26	10,077
Other foreign government debt	15,490	62	21	15,531
Other debt	5,650	59	4	5,705
Preferred shares	414	10	160	264
Common shares	1,634	243	58	1,819
<b>Total available-for-sale securities</b>	<b>\$ 50,054</b>	<b>\$ 740</b>	<b>\$ 285</b>	<b>\$ 50,509</b>

The net unrealized loss on available-for-sale securities of \$41 million (2016 – gain of \$455 million) increases to a net unrealized loss of \$48 million (2016 – gain of \$26 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.

## (c) An analysis of the fair value and carrying value of held-to-maturity securities is as follows:

As at October 31 (\$ millions)	Fair value		Carrying value	
	2017	2016	2017	2016
Canadian federal and provincial government issued or guaranteed debt	\$ 5,748	\$ 6,207	\$ 5,779	\$ 6,171
U.S. treasury and other U.S. agency debt	3,991	4,672	3,993	4,616
Other foreign government debt	2,690	2,901	2,705	2,898
Corporate debt	6,287	8,787	6,288	8,725
Total held-to-maturity securities	\$ 18,716	\$ 22,567	\$ 18,765	\$ 22,410

## (d) An analysis of available-for-sale securities with continuous unrealized losses:

As at October 31, 2017 (\$ millions)	Less than twelve months			Twelve months or greater			Total		
	Cost	Fair value	Unrealized losses	Cost	Fair value	Unrealized losses	Cost	Fair value	Unrealized losses
Canadian federal government issued or guaranteed debt	\$ 4,457	\$ 4,414	\$ 43	\$ 1,944	\$ 1,892	\$ 52	\$ 6,401	\$ 6,306	\$ 95
Canadian provincial and municipal debt	2,547	2,525	22	237	230	7	2,784	2,755	29
U.S. treasury and other U.S. agency debt	4,653	4,624	29	1,881	1,820	61	6,534	6,444	90
Other foreign government debt	11,082	11,058	24	419	409	10	11,501	11,467	34
Other debt	2,440	2,418	22	322	320	2	2,762	2,738	24
Preferred shares	–	–	–	380	293	87	380	293	87
Common shares	140	121	19	202	158	44	342	279	63
Total available-for-sale securities	\$ 25,319	\$ 25,160	\$ 159	\$ 5,385	\$ 5,122	\$ 263	\$ 30,704	\$ 30,282	\$ 422

As at October 31, 2016 (\$ millions)	Less than twelve months			Twelve months or greater			Total		
	Cost	Fair value	Unrealized losses	Cost	Fair value	Unrealized losses	Cost	Fair value	Unrealized losses
Canadian federal government issued or guaranteed debt	\$ 1,867	\$ 1,861	\$ 6	\$ 1,104	\$ 1,104	\$ –	\$ 2,971	\$ 2,965	\$ 6
Canadian provincial and municipal debt	807	798	9	193	192	1	1,000	990	10
U.S. treasury and other U.S. agency debt	2,238	2,212	26	–	–	–	2,238	2,212	26
Other foreign government debt	2,812	2,799	13	575	567	8	3,387	3,366	21
Other debt	877	875	2	409	407	2	1,286	1,282	4
Preferred shares	6	6	–	382	222	160	388	228	160
Common shares	303	280	23	140	105	35	443	385	58
Total available-for-sale securities	\$ 8,910	\$ 8,831	\$ 79	\$ 2,803	\$ 2,597	\$ 206	\$ 11,713	\$ 11,428	\$ 285

As at October 31, 2017, the cost of 631 (2016 – 474) available-for-sale securities exceeded their fair value by \$422 million (2016 – \$285 million). This unrealized loss is recorded in accumulated other comprehensive income as part of unrealized gains (losses) on available-for-sale securities. Of the 631 (2016 – 474) available-for-sale securities, 142 (2016 – 140) have been in an unrealized loss position continuously for more than a year, amounting to an unrealized loss of \$263 million (2016 – \$206 million).

Investment securities are considered to be impaired only if objective evidence indicates one or more loss events have occurred and have affected the estimated future cash flows after considering available collateral.

Collateral is not generally obtained directly from the issuers of debt securities. However, certain debt securities may be collateralized by specifically identified assets that would be obtainable in the event of default.

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

## (e) Net gain on sale of investment securities

An analysis of net gain on sale of investment securities is as follows:

For the year ended October 31 (\$ millions)	2017	2016	2015
Net realized gains	\$ 399	\$ 570	\$ 646
Impairment losses <sup>(1)</sup>	19	36	7
Net gain on sale of investment securities	\$ 380	\$ 534	\$ 639

(1) Impairment losses (gains) are comprised of \$14 from equity securities (2016 – \$36; 2015 – \$8) and \$5 from other debt securities (2016 – nil; 2015 – \$(1)).



## 12 Loans, Impaired Loans and Allowance for Credit Losses

### (a) Loans and acceptances outstanding by geography<sup>(1)</sup>

As at October 31 (\$ millions)	2017	2016
<b>Canada:</b>		
Residential mortgages	\$ 205,793	\$ 193,303
Personal and credit cards	77,790	74,698
Business and government	52,935	48,653
	<b>336,518</b>	<b>316,654</b>
<b>United States:</b>		
Personal and credit cards	1,228	1,844
Business and government	35,702	36,613
	<b>36,930</b>	<b>38,457</b>
<b>Mexico:</b>		
Residential mortgages	6,911	6,346
Personal and credit cards	3,584	3,079
Business and government	13,635	11,384
	<b>24,130</b>	<b>20,809</b>
<b>Chile:</b>		
Residential mortgages	7,302	6,300
Personal and credit cards	5,331	4,632
Business and government	10,109	8,466
	<b>22,742</b>	<b>19,398</b>
<b>Peru:</b>		
Residential mortgages	2,735	2,586
Personal and credit cards	5,092	4,573
Business and government	10,617	10,661
	<b>18,444</b>	<b>17,820</b>
<b>Colombia:</b>		
Residential mortgages	1,999	1,497
Personal and credit cards	3,591	3,850
Business and government	3,838	3,948
	<b>9,428</b>	<b>9,295</b>
<b>Other International:</b>		
Residential mortgages	12,176	12,855
Personal and credit cards	6,715	6,827
Business and government	41,613	42,675
	<b>60,504</b>	<b>62,357</b>
Total loans	<b>508,696</b>	<b>484,790</b>
Acceptances <sup>(2)</sup>	<b>13,560</b>	<b>11,978</b>
Total loans and acceptances <sup>(3)</sup>	<b>522,256</b>	<b>496,768</b>
Allowance for credit losses	<b>(4,327)</b>	<b>(4,626)</b>
Total loans and acceptances net of allowances for loan losses	<b>\$ 517,929</b>	<b>\$ 492,142</b>

(1) Geographic segmentation is based on the location of the property for residential mortgages; otherwise, the residence of the borrower.

(2) 1% of borrowers reside outside Canada.

(3) Loans and acceptances denominated in U.S. dollars were \$100,452 (2016 – \$103,503), in Mexican pesos \$18,857 (2016 – \$15,954), Chilean pesos \$17,824 (2016 – \$15,214), and in other foreign currencies \$44,176 (2016 – \$44,870).

**(b) Loan maturities**

As at October 31, 2017 (\$ millions)	Remaining term to maturity					Total	Rate sensitivity			
	Within one year	One to five years	Five to ten years	Over ten years	No specific maturity		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 and credit cards	15,952	31,500	4,478	815	50,586	103,331	43,737	58,508	1,086	103,331
Business and government	77,724	80,124	4,597	760	5,244	168,449	119,515	47,162	1,772	168,449
<b>Total</b>	<b>\$ 139,138</b>	<b>\$ 283,532</b>	<b>\$ 18,173</b>	<b>\$ 10,494</b>	<b>\$ 57,359</b>	<b>\$ 508,696</b>	<b>\$ 220,114</b>	<b>\$ 283,714</b>	<b>\$ 4,868</b>	<b>\$ 508,696</b>
Allowance for credit losses	–	–	–	–	(4,327)	(4,327)	–	–	(4,327)	(4,327)
<b>Total loans net of allowance for credit losses</b>	<b>\$ 139,138</b>	<b>\$ 283,532</b>	<b>\$ 18,173</b>	<b>\$ 10,494</b>	<b>\$ 53,032</b>	<b>\$ 504,369</b>	<b>\$ 220,114</b>	<b>\$ 283,714</b>	<b>\$ 541</b>	<b>\$ 504,369</b>

As at October 31, 2016 (\$ millions)	Remaining term to maturity					Total	Rate sensitivity			
	Within one year	One to five years	Five to ten years	Over ten years	No specific maturity		Floating	Fixed rate	Non-rate sensitive	Total
Residential mortgages	\$ 41,127	\$ 160,713	\$ 9,745	\$ 9,520	\$ 1,783	\$ 222,888	\$ 55,543	\$ 165,189	\$ 2,156	\$ 222,888
Personal and credit cards	14,107	31,191	4,820	993	48,391	99,502	40,163	58,439	900	99,502
Business and government	70,051	79,960	6,278	495	5,616	162,400	111,384	48,183	2,833	162,400
<b>Total loans</b>	<b>\$ 125,285</b>	<b>\$ 271,864</b>	<b>\$ 20,843</b>	<b>\$ 11,008</b>	<b>\$ 55,790</b>	<b>\$ 484,790</b>	<b>\$ 207,090</b>	<b>\$ 271,811</b>	<b>\$ 5,889</b>	<b>\$ 484,790</b>
Allowance for credit losses	–	–	–	–	(4,626)	(4,626)	–	–	(4,626)	(4,626)
<b>Total loans net of allowance for credit losses</b>	<b>\$ 125,285</b>	<b>\$ 271,864</b>	<b>\$ 20,843</b>	<b>\$ 11,008</b>	<b>\$ 51,164</b>	<b>\$ 480,164</b>	<b>\$ 207,090</b>	<b>\$ 271,811</b>	<b>\$ 1,263</b>	<b>\$ 480,164</b>

**(c) Impaired loans<sup>(1)(2)</sup>**

As at October 31 (\$ millions)	2017			2016		
	Gross impaired loans <sup>(1)</sup>	Allowance for credit losses	Net	Gross impaired loans <sup>(1)</sup>	Allowance for credit losses	Net
Residential mortgages	\$ 1,445	\$ 326 <sup>(3)</sup>	\$ 1,119	\$ 1,608	\$ 458 <sup>(3)</sup>	\$ 1,150
Personal and credit cards	1,610	1,583 <sup>(3)</sup>	27	1,622	1,596 <sup>(3)</sup>	26
Business and government	1,810	713 <sup>(4)</sup>	1,097	2,164	894 <sup>(4)</sup>	1,270
<b>Total</b>	<b>\$ 4,865</b>	<b>\$ 2,622</b>	<b>\$ 2,243</b>	<b>\$ 5,394</b>	<b>\$ 2,948</b>	<b>\$ 2,446</b>
<b>By geography:</b>						
Canada	\$ 1,049			\$ 1,258		
United States	140			210		
Mexico	303			301		
Peru	704			764		
Chile	565			499		
Colombia	462			381		
Other International	1,642			1,981		
<b>Total</b>	<b>\$ 4,865</b>			<b>\$ 5,394</b>		

(1) Interest income recognized on impaired loans during the year ended October 31, 2017 was \$23 (2016 – \$18).

(2) Excludes loans acquired under 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 (2016 – \$94).

(3) Allowance for credit losses for residential mortgages and personal and credit card loans is assessed on a collective basis.

(4) Allowance for credit losses for business and government loans is individually assessed.

For the years ended October 31, 2017 and 2016, the Bank would have recorded additional interest income of \$363 million and \$367 million, respectively, on impaired loans, if these impaired loans were classified as performing loans.

## (d) Allowance for credit losses

(\$ millions)	As at October 31, 2017					
	Balance at beginning of year	Write-offs <sup>(1)</sup>	Recoveries	Provision for credit losses	Other, including foreign currency adjustment <sup>(3)</sup>	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 <sup>(2)</sup>	234	(14)	54	(7)	(8)	259
	<b>\$ 4,626</b>	<b>\$ (3,173)</b>	<b>\$ 680</b>	<b>\$ 2,249</b>	<b>\$ (55)</b>	<b>\$ 4,327</b>

(\$ millions)	As at October 31, 2016					
	Balance at beginning of year	Write-offs <sup>(1)</sup>	Recoveries	Provision for credit losses	Other, including foreign currency adjustment <sup>(3)</sup>	Balance at end of year
Individual	\$ 717	\$ (428)	\$ 40	\$ 585	\$ (20)	\$ 894
Collective	3,260	(2,151)	542	1,827	20	3,498
Total before loans acquired under FDIC guarantee	3,977	(2,579)	582	2,412	–	4,392
Loans acquired under FDIC guarantee <sup>(2)</sup>	220	(9)	18	–	5	234
	<b>\$ 4,197</b>	<b>\$ (2,588)</b>	<b>\$ 600</b>	<b>\$ 2,412</b>	<b>\$ 5</b>	<b>\$ 4,626</b>

	2017	2016
Represented by:		
Allowance against impaired loans	\$ 2,622	\$ 2,948
Allowance against performing loans and loans past due but not impaired <sup>(4)</sup>	1,446	1,444
Total before loans acquired under FDIC guarantee	4,068	4,392
Loans acquired under FDIC guarantee <sup>(2)</sup>	259	234
	<b>\$ 4,327</b>	<b>\$ 4,626</b>

- (1) For the wholesale portfolios, impaired loans restructured during the year amounted to \$260 (2016 – \$111). Write-offs of impaired loans restructured during the year were \$12 (2016 – nil). Non-impaired loans restructured during the year amounted to \$104 (2016 – \$55).
- (2) This represents the gross amount of allowance for credit losses as the receivable from FDIC is separately recorded in other assets.
- (3) Includes rebalancing of reserves between off-balance sheet and on-balance sheet credit exposures.
- (4) The allowance for performing loans is attributable to business and government loans \$625 (2016 – \$662) with the remainder allocated to personal and credit card loans \$720 (2016 – \$662) and residential mortgages \$101 (2016 – \$120).

## (e) Loans acquired under FDIC guarantee

As at October 31, 2017 (\$ millions)	Non-single family home loans	Single family home loans	Total
R-G Premier Bank			
Net carrying value	412	1,508	1,920
Allowance for credit losses	(138)	(121)	(259)
	<b>\$ 274</b>	<b>\$ 1,387</b>	<b>\$ 1,661</b>

As at October 31, 2016 (\$ millions)	Non-single family home loans	Single family home loans	Total
R-G Premier Bank			
Net carrying value	488	1,728	2,216
Allowance for credit losses	(157)	(77)	(234)
	<b>\$ 331</b>	<b>\$ 1,651</b>	<b>\$ 1,982</b>

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 loan losses. The provision for credit losses in the Consolidated Statement of Income related to these loans is reflected net of the amount expected to be reimbursed by the FDIC. Allowance for credit losses in the Consolidated Statement of Financial Position is reflected on a gross basis. The FDIC guarantee on non-single family loans expired in 2015. The guarantee for single family home loans will expire in April 2020.

A net receivable of \$106 million (2016 – \$116 million) from the FDIC is included in Other assets in the Consolidated Statement of Financial Position.

**(f) Loans past due but not impaired<sup>(1)</sup>**

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)	2017 <sup>(2)(3)</sup>				2016 <sup>(2)(3)</sup>			
	31 – 60 days	61 – 90 days	91 days and greater	Total	31 – 60 days	61 – 90 days	91 days and greater	Total
Residential mortgages	\$ 1,035	\$ 446	\$ 122	\$ 1,603	\$ 1,194	\$ 472	\$ 123	\$ 1,789
Personal and credit cards	724	423	75	1,222	784	447	94	1,325
Business and government	215	55	187	457	186	44	189	419
<b>Total</b>	<b>\$ 1,974</b>	<b>\$ 924</b>	<b>\$ 384</b>	<b>\$ 3,282</b>	<b>\$ 2,164</b>	<b>\$ 963</b>	<b>\$ 406</b>	<b>\$ 3,533</b>

(1) Loans past due 30 days or less are not presented in this analysis as they are not administratively considered past due.

(2) Excludes loans acquired under the FDIC guarantee related to the acquisition of R-G Premier Bank of Puerto Rico.

(3) These loans would be considered in the determination of an appropriate level of collective allowances despite not being individually classified as impaired.

### 13 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)	2017 <sup>(1)</sup>	2016 <sup>(1)</sup>
<b>Assets</b>		
Carrying value of residential mortgage loans	\$ 18,178	\$ 17,570
Other related assets <sup>(2)</sup>	2,293	3,102
<b>Liabilities</b>		
Carrying value of associated liabilities	19,278	19,836

(1) The fair value of the transferred assets is \$20,580 (2016 – \$20,776) and the fair value of the associated liabilities is \$19,863 (2016 – \$20,493), for a net position of \$717 (2016 – \$283).

(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 and credit cards loans. For further details, refer to Note 14.

#### *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)	2017 <sup>(1)</sup>	2016 <sup>(1)</sup>
Carrying value of assets associated with:		
Repurchase agreements <sup>(2)</sup>	\$ 86,789	\$ 87,402
Securities lending agreements	40,535	38,668
<b>Total</b>	<b>127,324</b>	<b>126,070</b>
Carrying value of associated liabilities <sup>(3)</sup>	\$ 95,843	\$ 97,033

(1) The fair value of transferred assets is \$127,324 (2016 – \$126,070) and the fair value of the associated liabilities is \$95,843 (2016 – \$97,033), for a net position of \$31,481 (2016 – \$29,037).

(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.

## 14 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 Scotia Covered Bond Trust, Scotiabank Covered Bond Guarantor Limited Partnership, Hollis Receivables Term Trust II, Trillium Credit Card Trust II and Securitized Term Auto Receivables Trust 2016-1, 2017-1, and 2017-2.

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.

#### *Covered bond programs*

##### *Scotia Covered Bond Trust*

Under the Bank's global covered bond program, the Bank issued debt to investors that is guaranteed by Scotia Covered Bond Trust (the "Trust"). Under the program, the Trust purchased CMHC insured residential mortgages from the Bank, which it acquired with funding provided by the Bank. All of the Bank's outstanding covered bonds issued under this program have matured in March 2017. As at October 31, 2016, \$6.0 billion covered bonds were outstanding and included in Deposits – Business and government on the Consolidated Statement of Financial Position and \$4.8 billion assets pledged in relation to these covered bonds were insured residential mortgages denominated in Canadian dollars.

##### *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, 2017, \$25.7 billion (2016 – \$23.9 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, 2017, assets pledged in relation to these covered bonds were uninsured residential mortgages denominated in Canadian dollars of \$27.8 billion (2016 – \$25.7 billion).

##### *Personal line of credit securitization trust*

The Bank securitizes a portion of its unsecured personal line of credit receivables (receivables) through Hollis Receivables Term Trust II (Hollis), a Bank-sponsored structured entity. Hollis 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 Hollis. The subordinated notes issued by Hollis are held by the Bank. As at October 31, 2017, \$1 billion notes (2016 – \$1.5 billion) were outstanding and included in Deposits – Business and government on the Consolidated Statement of Financial Position. As at October 31, 2017, assets pledged in relation to these notes were \$1.3 billion (2016 – \$1.8 billion).

##### *Credit card receivables securitization trust*

The Bank securitizes a portion of its 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, 2017, US \$0.9 billion (\$1.2 billion Canadian dollars) (2016 – US \$0.9 billion, \$1.2 billion

CONSOLIDATED FINANCIAL STATEMENTS

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, 2017 assets pledged in relation to these notes were credit card receivables, denominated in Canadian dollars, of \$1.3 billion (2016 – \$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 and 2017-2 (START). Each Trust is a Bank-sponsored structured entity. START issues multiple series of Class A notes to third-party investors and 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 issued by START are held by the Bank. As at October 31, 2017, the following Class A notes were outstanding and included in Deposits – Business and government on the Consolidated Statement of Financial Position: US \$0.3 billion (\$0.4 billion Canadian dollars) (2016 – US \$0.5 billion, \$0.7 billion Canadian dollars) for 2016-1, US \$0.5 billion (\$0.7 billion Canadian dollars) for 2017-1 and US \$0.8 billion (\$1.0 billion Canadian dollars) for 2017-2. As at October 31, 2017, assets pledged in relation to these notes were Canadian auto loan receivables denominated in Canadian dollars of \$0.4 billion (2016 – \$0.7 billion) for 2016-1, \$0.8 billion for 2017-1 and \$1.1 billion for 2017-2.

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.

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

(\$ millions)	As at October 31, 2016				
	Canadian multi-seller conduits that the Bank administers	Structured finance entities	Capital funding vehicles	Other	Total
<b>Total assets (on structured entity's financial statements)</b>	<b>\$ 4,401</b>	<b>\$ 7,653</b>	<b>\$ 1,520</b>	<b>\$ 68</b>	<b>\$ 13,642</b>
<b>Assets recognized on the Bank's financial statements</b>					
Trading assets	2	467	–	–	469
Investment securities	–	1,147	15	20	1,182
Loans <sup>(1)</sup>	–	712	47	–	759
	2	2,326	62	20	2,410
<b>Liabilities recognized on the Bank's financial statements</b>					
Deposits – Business and government	–	–	1,400	–	1,400
Derivative financial instruments	2	–	–	–	2
	2	–	1,400	–	1,402
<b>Bank's maximum exposure to loss</b>	<b>\$ 4,401</b>	<b>\$ 2,326</b>	<b>\$ 62</b>	<b>\$ 20</b>	<b>\$ 6,809</b>

(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, 2017, the Bank has recorded \$1.8 billion (2016 – \$2.4 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 liquidity asset purchase agreement (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 \$1.9 billion (2016 – \$1.4 billion) based on future asset purchases by these conduits.

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

#### Structured finance entities

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

#### Capital funding vehicles

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

#### Other

Other includes investments in managed funds, collateralized debt obligation entities, and other structured entities. The Bank's maximum exposure to loss is limited to its net investment in these funds.

#### 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)	2017			2016		
	Funds <sup>(1)</sup>	Scotia Managed Companies	Total	Funds <sup>(1)</sup>	Scotia Managed Companies	Total
Revenue	\$ 2,016	\$ 5	\$ 2,021	\$ 1,960	\$ 8	\$ 1,968

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

The Bank earned revenue of \$2,021 million (2016 – \$1,968 million) from its involvement with the unconsolidated Bank-sponsored structured entities including mutual funds, for the year ended October 31, 2017, which was comprised of interest income of \$1 million (2016 – \$2 million), non-interest income – banking of \$134 million (2016 – \$134 million) and non-interest income – wealth management of \$1,886 million (2016 – \$1,832 million), including mutual fund, brokerage and investment management and trust fees.

## 15 Property and Equipment

(\$ millions)	Land & Building	Equipment	Technology Assets	Leasehold Improvements	Total
Cost					
Balance as at October 31, 2015	\$ 1,983	\$ 1,592	\$ 1,947	\$ 1,305	\$ 6,827
Acquisitions	156	18	42	26	242
Additions	256	209	14	98	577
Disposals	(286)	(83)	(19)	(61)	(449)
Foreign currency adjustments and other	(38)	(8)	(1)	(11)	(58)
Balance as at October 31, 2016	<b>\$ 2,071</b>	<b>\$ 1,728</b>	<b>\$ 1,983</b>	<b>\$ 1,357</b>	<b>\$ 7,139</b>
Additions	<b>169</b>	<b>147</b>	<b>161</b>	<b>126</b>	<b>603</b>
Disposals	<b>(224)</b>	<b>(52)</b>	<b>(41)</b>	<b>(28)</b>	<b>(345)</b>
Foreign currency adjustments and other	<b>(294)</b>	<b>69</b>	<b>(15)</b>	<b>(45)</b>	<b>(285)</b>
Balance as at October 31, 2017	<b>\$ 1,722</b>	<b>\$ 1,892</b>	<b>\$ 2,088</b>	<b>\$ 1,410</b>	<b>\$ 7,112</b>
Accumulated depreciation					
Balance as at October 31, 2015	\$ 754	\$ 1,372	\$ 1,606	\$ 809	\$ 4,541
Depreciation	99	104	66	56	325
Disposals	(69)	(103)	(18)	(18)	(208)
Foreign currency adjustments and other	(18)	(11)	(1)	(9)	(39)
Balance as at October 31, 2016	<b>\$ 766</b>	<b>\$ 1,362</b>	<b>\$ 1,653</b>	<b>838</b>	<b>\$ 4,619</b>
Depreciation	<b>47</b>	<b>91</b>	<b>131</b>	<b>71</b>	<b>340</b>
Disposals	<b>(58)</b>	<b>(37)</b>	<b>(40)</b>	<b>(17)</b>	<b>(152)</b>
Foreign currency adjustments and other	<b>(69)</b>	<b>34</b>	<b>(25)</b>	<b>(16)</b>	<b>(76)</b>
Balance as at October 31, 2017	<b>\$ 686</b>	<b>\$ 1,450</b>	<b>\$ 1,719</b>	<b>\$ 876</b>	<b>4,731</b>
Net book value					
Balance as at October 31, 2016	\$ 1,305	\$ 366	\$ 330	\$ 519	\$ 2,520 <sup>(1)</sup>
Balance as at October 31, 2017	<b>\$ 1,036</b>	<b>\$ 442</b>	<b>\$ 369</b>	<b>\$ 534</b>	<b>\$ 2,381<sup>(1)</sup></b>

(1) Includes \$16 (2016 – \$20) of investment property.

## 16 Investments in Associates

The Bank had significant investments in the following associates:

As at October 31 (\$ millions)	2017					2016
	Country of incorporation	Nature of business	Ownership percentage	Date of financial statements <sup>(1)</sup>	Carrying value	Carrying value
Thanachart Bank Public Company Limited	<b>Thailand</b>	<b>Banking</b>	<b>49.0%</b>	<b>September 30, 2017</b>	<b>\$ 2,789</b>	\$ 2,612
Canadian Tire's Financial Services business (CTFS) <sup>(2)</sup>	<b>Canada</b>	<b>Financial Services</b>	<b>20.0%</b>	<b>September 30, 2017</b>	<b>542</b>	532
Bank of Xi'an Co. Ltd.	<b>China</b>	<b>Banking</b>	<b>19.9%</b>	<b>September 30, 2017</b>	<b>711</b>	654
Maduro & Curiel's Bank N.V. <sup>(3)</sup>	<b>Curacao</b>	<b>Banking</b>	<b>48.1%</b>	<b>September 30, 2017</b>	<b>284</b>	280
Banco del Caribe <sup>(4)</sup>	<b>Venezuela</b>	<b>Banking</b>	<b>26.6%</b>	<b>September 30, 2017</b>	<b>35</b>	26

(1) Represents the date of the most recent published 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 published 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, 2017 these reserves amounted to \$61 (2016 – \$63).

(4) As at October 31, 2017, the Bank's total net investment in Banco del Caribe, along with monetary assets, comprising of cash and dividend receivable was translated at the DICOM exchange rate of 1 USD to 3,345 VEF (2016 – 1 USD to 660 VEF).



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

(\$ millions)	For the twelve months ended and as at September 30, 2017 <sup>(1)</sup>			
	Revenue	Net income	Total assets	Total liabilities
Thanachart Bank Public Company Limited	\$ 1,718	\$ 508	\$ 38,050	\$ 32,902
Canadian Tire's Financial Services business (CTFS)	1,040	334	6,233	5,235
Bank of Xi'an Co. Ltd.	915	411	41,170	37,821
Maduro & Curiel's Bank N.V.	343	80	5,501	4,896
Banco del Caribe	104	(29)	644	510

(\$ millions)	For the twelve months ended and as at September 30, 2016 <sup>(1)</sup>			
	Revenue	Net income	Total assets	Total liabilities
Thanachart Bank Public Company Limited	\$ 1,622	\$ 449	\$ 37,372	\$ 32,637
Canadian Tire's Financial Services business (CTFS)	999	305	5,490	4,469
Bank of Xi'an Co. Ltd.	915	427	38,083	35,022
Maduro & Curiel's Bank N.V.	347	101	5,456	4,855
Banco del Caribe	90	(46)	703	601

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

## 17 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, 2015	\$ 3,361	\$ 258	\$ 2,391	\$ 1,005	\$ 7,015
Acquisitions	49	–	–	241	290
Foreign currency adjustments and other	(7)	7	70	9	79
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

### 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 12.5 times (2016 – 10 to 13 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.

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.

Goodwill was assessed for annual impairment as at July 31, 2017 and July 31, 2016 and no impairment was determined to exist.

**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.

(\$ millions)	Finite life		Indefinite life		Total
	Computer software	Other intangibles	Fund management contracts <sup>(1)</sup>	Other intangibles	
<b>Cost</b>					
Balance as at October 31, 2015	\$ 2,193	\$ 1,510	\$ 2,325	\$ 68	\$ 6,096
Acquisitions	–	61	–	–	61
Additions	584	31	–	–	615
Foreign currency adjustments and other	(40)	29	–	–	(11)
Balance as at October 31, 2016	\$ 2,737	\$ 1,631	\$ 2,325	\$ 68	\$ 6,761
Additions	<b>584</b>	<b>5</b>	–	–	<b>589</b>
Disposals	<b>(3)</b>	<b>(56)</b>	–	–	<b>(59)</b>
Foreign currency adjustments and other	<b>(40)</b>	<b>(17)</b>	–	–	<b>(57)</b>
Balance as at October 31, 2017	<b>\$ 3,278</b>	<b>\$ 1,563</b>	<b>\$ 2,325</b>	<b>\$ 68</b>	<b>\$ 7,234</b>
<b>Accumulated amortization</b>					
Balance as at October 31, 2015	\$ 778	\$ 884	\$ –	\$ –	\$ 1,662
Amortization	255	104	–	–	359
Foreign currency adjustments and other	(24)	7	–	–	(17)
Balance as at October 31, 2016	\$ 1,009	\$ 995	\$ –	\$ –	\$ 2,004
Amortization	<b>339</b>	<b>82</b>	–	–	<b>421</b>
Disposals	<b>(2)</b>	<b>(18)</b>	–	–	<b>(20)</b>
Foreign currency adjustments and other	<b>(25)</b>	<b>(9)</b>	–	–	<b>(34)</b>
Balance as at October 31, 2017	<b>\$ 1,321</b>	<b>\$ 1,050</b>	<b>\$ –</b>	<b>\$ –</b>	<b>\$ 2,371</b>
Net book value					
As at October 31, 2016	\$ 1,728 <sup>(2)</sup>	\$ 636	\$ 2,325	\$ 68	\$ 4,757
As at October 31, 2017	<b>\$ 1,957<sup>(2)</sup></b>	<b>\$ 513</b>	<b>\$ 2,325</b>	<b>\$ 68</b>	<b>\$ 4,863</b>

(1) Fund management contracts are attributable to HollisWealth Inc. (formerly DundeeWealth Inc.).

(2) Computer software comprises of purchased software of \$500 (2016 – \$377), internally generated software of \$981 (2016 – \$948), and in process software not subject to amortization of \$476 (2016 – \$403).

**Impairment testing of 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% (2016 – 4.5%) applied thereafter. These cash flows have been discounted at a rate of 10% (2016 – 10%). Management believes that reasonable negative changes in any one key assumption used to determine the recoverable amount would not result in an impairment.

Indefinite life intangible assets were assessed for annual impairment as at July 31, 2017 and July 31, 2016 and no impairment was determined to exist.

**18 Other Assets**

As at October 31 (\$ millions)	2017	2016
Accrued interest	\$ 2,176	\$ 1,986
Accounts receivable and prepaids	1,674	1,939
Current tax assets	327	422
Margin deposit derivatives	3,041	4,604
Pension assets (Note 27)	256	184
Receivable from brokers, dealers and clients	913	796
Receivable from the Federal Deposit Insurance Corporation (Note 12)	106	116
Other	4,256	2,823
Total	<b>\$ 12,749</b>	\$ 12,870

## 19 Deposits

As at October 31 (\$ millions)	2017					2016
	Payable on demand <sup>(1)</sup>		Payable after notice <sup>(2)</sup>	Payable on a fixed date <sup>(3)</sup>	Total	
Interest-bearing	Non-interest bearing					
Personal	\$ 8,514	\$ 6,541	\$ 119,111	\$ 65,864	\$ 200,030	\$ 199,302
Business and government	81,132	23,805	32,850	247,201	384,988	372,303
Financial institutions	5,066	1,706	2,162	31,415	40,349	40,272
<b>Total</b>	<b>\$ 94,712</b>	<b>\$ 32,052</b>	<b>\$ 154,123<sup>(4)</sup></b>	<b>\$ 344,480</b>	<b>\$ 625,367</b>	<b>\$ 611,877</b>
Recorded in:						
Canada	\$ 76,776	\$ 17,742	\$ 121,441	\$ 229,528	\$ 445,487	\$ 434,884
United States	10,403	171	5,773	41,723	58,070	54,997
United Kingdom	–	–	277	11,764	12,041	15,256
Mexico	8	4,167	5,949	9,295	19,419	16,264
Peru	2,467	555	3,734	8,460	15,216	15,547
Chile	375	2,020	72	9,107	11,574	10,801
Colombia	46	388	3,062	4,091	7,587	7,272
Other International	4,637	7,009	13,815	30,512	55,973	56,856
<b>Total<sup>(5)</sup></b>	<b>\$ 94,712</b>	<b>\$ 32,052</b>	<b>\$ 154,123</b>	<b>\$ 344,480</b>	<b>\$ 625,367</b>	<b>\$ 611,877</b>

(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 (2016 – \$135) of non-interest bearing deposits.

(5) Deposits denominated in U.S. dollars amount to \$216,018 (2016 – \$217,850), deposits denominated in Mexican pesos amount to \$17,156 (2016 – \$14,464) and deposits denominated in other foreign currencies amount to \$81,283 (2016 – \$76,777).

The following table presents the maturity schedule for term deposits in Canada greater than \$100,000<sup>(1)</sup>.

(\$ millions)	Within three months	Three to six months	Six to twelve months	One to five years	Over five years	Total
<b>As at October 31, 2017</b>	<b>\$ 33,678</b>	<b>\$ 26,579</b>	<b>\$ 31,190</b>	<b>\$ 94,563</b>	<b>\$ 16,073</b>	<b>\$ 202,083</b>
As at October 31, 2016	\$ 40,211	\$ 24,077	\$ 23,690	\$ 99,905	\$ 12,451	\$ 200,334

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

## 20 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)			2017	2016
Maturity date	Interest rate (%)	Terms <sup>(1)</sup>	Carrying value <sup>(2)</sup>	Carrying value <sup>(2)</sup>
August 2022	2.898	Redeemed on August 3, 2017.	\$ –	\$ 1,500
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%.	1,756	1,798
June 2025	8.90	Redeemable at any time.	260	262
December 2025 <sup>(3)</sup>	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%.	737	759
December 2025 <sup>(3)</sup>	4.50	US\$1,250 million. Interest will be payable semi-annually in arrears on June 16 and December 16 of each year.	1,613	1,677
March 2027 <sup>(3)</sup>	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%.	1,219	1,271
November 2037	3.015	JPY ¥10 billion. Redeemed on November 20, 2017.	113	118
April 2038	3.37	JPY ¥10 billion. Redeemable on April 9, 2018.	110	116
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.	127	132
			<b>\$ 5,935</b>	<b>\$ 7,633</b>

(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.

## 21 Other Liabilities

As at October 31 (\$ millions)	2017	2016
Accrued interest	\$ 2,172	\$ 2,033
Accounts payable and accrued expenses	5,867	5,427
Current tax liabilities	408	587
Deferred tax liabilities (Note 26)	697	611
Gold and silver certificates and bullion	6,819	8,430
Margin and collateral accounts	7,129	6,708
Payables to brokers, dealers and clients	796	528
Provisions (Note 22)	333	536
Pension liabilities (Note 27)	808	1,613
Other liabilities of subsidiaries and structured entities	12,954	10,950
Other	5,331	5,293
<b>Total</b>	<b>\$ 43,314</b>	<b>\$ 42,716</b>

## 22 Provisions

(\$ millions)	Off-balance sheet credit risks	Restructuring	Other	Total
As at November 1, 2015	\$ 112	\$ 49	\$ 154	\$ 315
Provisions made during the year	26	378	85	489
Provisions utilized / released during the year	–	(150)	(118)	(268)
Balance as at October 31, 2016	\$ 138	\$ 277	\$ 121	\$ 536
Provisions made during the year	–	–	27	27
Provisions utilized / released during the year	(18)	(174)	(38)	(230)
<b>Balance as at October 31, 2017</b>	<b>\$ 120</b>	<b>\$ 103</b>	<b>\$ 110</b>	<b>\$ 333</b>

### Off-balance sheet credit risks

The provision for off-balance sheet credit risks relates primarily to credit risks such as undrawn lending commitments, letters of credit and letters of guarantee. These are collectively assessed at each reporting period in a manner consistent with the collective allowance for performing on-balance sheet credit risks.

### 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, 2017, \$103 million of the restructuring provision remains and is expected to be utilized in line with the approved plans, during fiscal 2018. This amount represents the Bank's best estimate of the amount required to settle the obligation. Uncertainty exists with respect to when the obligation will be settled and the amounts ultimately paid, as this will largely depend upon individual facts and circumstances.

### 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.

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.

## 23 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)	2017		2016	
	Number of shares	Amount	Number of shares	Amount
<b>Outstanding at beginning of year</b>	<b>1,207,893,604</b>	<b>\$ 15,513</b>	1,202,937,205	\$ 15,141
Issued under Shareholder Dividend and Share Purchase Plan <sup>(1)</sup>	–	–	2,234,037	153
Issued in relation to share-based payments, net (Note 25)	<b>5,338,111</b>	<b>313</b>	4,228,124	236
Issued in relation to the acquisition of a subsidiary or associated corporation	–	–	29,138	2
Repurchased for cancellation under the Normal Course Issuer Bid	<b>(14,000,000)</b>	<b>(182)</b>	(1,534,900)	(19)
<b>Outstanding at end of year</b>	<b>1,199,231,715<sup>(2)</sup></b>	<b>\$ 15,644</b>	1,207,893,604 <sup>(2)</sup>	\$ 15,513

(1) Effective November 29, 2016, the Bank discontinued the issuance of shares from Treasury for the Dividend and Share Purchase options of the Plan. Purchases of Common Shares under the Plan were made by Computershare Trust Company of Canada, as agent under the Plan (the "Agent"), at the average market price in the secondary market in accordance with the provisions of the plan. As at October 31, 2017, there were 7,786,784 common shares held in reserve for issuance under the Plan.

(2) 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 2017, the number of such shares bought and sold was 15,856,738 (2016 – 13,912,150).

### Dividend

The dividends paid on common shares in fiscal 2017 and 2016 were \$3,668 million (\$3.05 per share) and \$3,468 million (\$2.88 per share), respectively. The Board of Directors approved a quarterly dividend of 79 cents per common share at its meeting on November 27, 2017. This quarterly dividend applies to shareholders of record as of January 2, 2018, and is payable January 29, 2018.

### Normal Course Issuer Bid

During the year ended October 31, 2017, under normal course issuer bids, the Bank repurchased and cancelled approximately 14 million common shares (2016 – 1.5 million) at an average price of \$72.09 per share (2016 – \$52.34) for a total amount of approximately \$1,009 million (2016 – \$80 million).

On May 30, 2017, the Bank announced that OSFI and the TSX approved a NCIB pursuant to which it may repurchase for cancellation up to 24 million of the Bank's common shares. Purchases under this NCIB may commence on June 2, 2017 and will terminate upon the earlier of: (i) the Bank purchasing the maximum number of common shares under the NCIB, (ii) the Bank providing a notice of termination, or (iii) June 1, 2018. On a quarterly basis, the Bank will notify OSFI prior to making purchases.

On May 31, 2016, the Bank announced that OSFI and the Toronto Stock Exchange (TSX) approved a normal course issuer bid pursuant to which it may repurchase for cancellation up to 12 million of the Bank's common shares. On January 4, 2017 and March 17, 2017 the TSX approved amendments to the NCIB to allow the Bank to purchase common shares under the NCIB, including by private agreement or under a specific share repurchase program, respectively. The bid ended on June 1, 2017.

### 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, 2017 would be 1,757 million common shares (2016 – 1,373 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 20 – Subordinated debentures and Note 23 (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:

As at October 31 (\$ millions)	2017				2016			
	Number of shares	Amount	Dividends declared per share	Conversion feature	Number of shares	Amount	Dividends declared per share	Conversion feature
<b>Preferred shares:<sup>(a)</sup></b>								
Series 16 <sup>(b)</sup>	–	–	<b>0.328125</b>	–	13,800,000	345	1.312500	–
Series 17 <sup>(c)</sup>	–	–	<b>0.700000</b>	–	9,200,000	230	1.400000	–
Series 18 <sup>(d)(e)</sup>	<b>7,497,663</b>	<b>187</b>	<b>0.837500</b>	<b>Series 19</b>	7,497,663	187	0.837500	Series 19
Series 19 <sup>(d)(e)</sup>	<b>6,302,337</b>	<b>158</b>	<b>0.642626</b>	<b>Series 18</b>	6,302,337	158	0.628938	Series 18
Series 20 <sup>(d)(f)</sup>	<b>8,039,268</b>	<b>201</b>	<b>0.902500</b>	<b>Series 21</b>	8,039,268	201	0.902500	Series 21
Series 21 <sup>(d)(f)</sup>	<b>5,960,732</b>	<b>149</b>	<b>0.554501</b>	<b>Series 20</b>	5,960,732	149	0.541438	Series 20
Series 22 <sup>(d)(g)</sup>	<b>9,376,944</b>	<b>234</b>	<b>0.957500</b>	<b>Series 23</b>	9,376,944	234	0.957500	Series 23
Series 23 <sup>(d)(g)</sup>	<b>2,623,056</b>	<b>66</b>	<b>0.600126</b>	<b>Series 22</b>	2,623,056	66	0.586438	Series 22
Series 30 <sup>(d)(h)</sup>	<b>6,142,738</b>	<b>154</b>	<b>0.455000</b>	<b>Series 31</b>	6,142,738	154	0.455000	Series 31
Series 31 <sup>(d)(h)</sup>	<b>4,457,262</b>	<b>111</b>	<b>0.380126</b>	<b>Series 30</b>	4,457,262	111	0.366438	Series 30
Series 32 <sup>(d)(i)</sup>	<b>11,161,422</b>	<b>279</b>	<b>0.515752</b>	<b>Series 33</b>	11,161,422	279	0.638235	Series 33
Series 33 <sup>(d)(i)</sup>	<b>5,184,345</b>	<b>130</b>	<b>0.465159</b>	<b>Series 32</b>	5,184,345	130	0.334959	Series 32
Series 34 <sup>(d)(j)(m)</sup>	<b>14,000,000</b>	<b>350</b>	<b>1.375000</b>	<b>Series 35</b>	14,000,000	350	1.184800	Series 35
Series 36 <sup>(d)(k)(m)</sup>	<b>20,000,000</b>	<b>500</b>	<b>1.375000</b>	<b>Series 37</b>	20,000,000	500	0.852350	Series 37
Series 38 <sup>(d)(l)(m)</sup>	<b>20,000,000</b>	<b>500</b>	<b>1.351175</b>	<b>Series 39</b>	20,000,000	500	–	–
<b>Total preferred shares</b>	<b>120,745,767</b>	<b>\$ 3,019</b>			<b>143,745,767</b>	<b>\$ 3,594</b>		

Terms of preferred shares

	Issue date	Issue price	Initial dividend	Initial dividend payment date	Rate reset spread	Redemption date	Redemption price
<b>Preferred shares:<sup>(a)</sup></b>							
Series 16 <sup>(b)</sup>	October 12, 2007	25.00	0.391950	January 29, 2008	–	January 27, 2017	25.00
Series 17 <sup>(c)</sup>	January 31, 2008	25.00	0.337530	April 28, 2008	–	April 26, 2017	25.00
Series 18 <sup>(d)(e)</sup>	March 25, 2008 March 27, 2008	25.00	0.431500	July 29, 2008	2.05%	April 26, 2018	25.00
Series 19 <sup>(d)(e)</sup>	April 26, 2013	25.00	0.189250	July 29, 2013	2.05%	April 26, 2013 to April 26, 2018	25.50
Series 20 <sup>(d)(f)</sup>	June 10, 2008	25.00	0.167800	July 29, 2008	1.70%	October 26, 2018	25.00
Series 21 <sup>(d)(f)</sup>	October 26, 2013	25.00	0.167875	January 29, 2014	1.70%	October 26, 2013 to October 26, 2018	25.50
Series 22 <sup>(d)(g)</sup>	September 9, 2008	25.00	0.482900	January 28, 2009	1.88%	January 26, 2019	25.00
Series 23 <sup>(d)(g)</sup>	January 26, 2014	25.00	0.173875	April 28, 2014	1.88%	January 26, 2014 to January 26, 2019	25.50
Series 30 <sup>(d)(h)</sup>	April 12, 2010	25.00	0.282200	July 28, 2010	1.00%	April 26, 2020	25.00
Series 31 <sup>(d)(h)</sup>	April 26, 2015	25.00	0.095500	July 29, 2015	1.00%	April 26, 2015 to April 26, 2020	25.50
Series 32 <sup>(d)(i)</sup>	February 1, 2011 February 28, 2011	25.00	0.215410	April 27, 2011	1.34%	February 2, 2021	25.00
Series 33 <sup>(d)(i)</sup>	February 2, 2016	25.00	0.105690	April 27, 2016	1.34%	February 2, 2016 to February 2, 2021	25.50
Series 34 <sup>(d)(j)(m)</sup>	December 17, 2015	25.00	0.497300	April 27, 2016	4.51%	April 26, 2021	25.00
Series 36 <sup>(d)(k)(m)</sup>	March 14, 2016	25.00	0.508600	July 27, 2016	4.72%	July 26, 2021	25.00
Series 38 <sup>(d)(l)(m)</sup>	September 16, 2016	25.00	0.441800	January 27, 2017	4.19%	January 27, 2022	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 18, 20, 22, 30 and 32) and the Non-cumulative 5-Year Rate Reset Preferred Shares Non Viability Contingent Capital (NVCC) (Series 34, 36, and 38) 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 19, 21, 23, 31, 33, 35, 37 and 39 are payable quarterly, as and when declared by the Board. Dividends on the Non-cumulative 5-Year Rate Reset Preferred Shares (Series 19, 21, 23, 31

- and 33) and the Non-cumulative 5-Year Rate Reset Preferred Shares NVCC (Series 35, 37 and 39) 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 January 27, 2017, the Bank redeemed all outstanding Non-cumulative Preferred shares Series 16 and paid a dividend of \$0.328125 per share.
  - (c) On April 26, 2017, the Bank redeemed all outstanding Non-cumulative Preferred shares Series 17 and paid a dividend of \$0.350000 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 18 and 19, 20 and 21, 22 and 23, 30 and 31, 32 and 33, 34 and 35, 36 and 37, and 38 and 39, 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 18 Non-cumulative 5-Year Rate Reset Preferred Shares will have the option to convert shares into an equal number of Series 19 non-cumulative floating rate preferred shares on April 26, 2018 and on April 26 every five years thereafter. With regulatory approval, the Series 18 preferred shares may be redeemed by the Bank on April 26, 2018 and every five years thereafter, respectively, at \$25.00 per share, together with declared and unpaid dividends. With regulatory approval, the Series 19 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, 2018 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 on or after April 26, 2013.
  - (f) Holders of Series 20 Non-cumulative 5-Year Rate Reset Preferred Shares will have the option to convert shares into an equal number of Series 21 non-cumulative floating rate preferred shares on October 26, 2018, and on October 26 every five years thereafter. With regulatory approval, the Series 20 preferred shares may be redeemed by the Bank on October 26, 2018, and every five years thereafter, respectively, at \$25.00 per share, together with declared and unpaid dividends. With regulatory approval, the Series 21 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 October 26, 2018 and on October 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 on or after October 26, 2013.
  - (g) 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.
  - (h) 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.
  - (i) 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, respectively, 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.
  - (j) 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 for Series 35 preferred shares (NVCC), if applicable, on April 26, 2026 and every five years thereafter, respectively, at \$25.00 per share, together with declared and unpaid dividends.
  - (k) 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 for Series 37 preferred shares, if applicable, on July 26, 2026 and every five years thereafter, respectively, at \$25.00 per share, together with declared and unpaid dividends.
  - (l) 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 for Series 39 preferred shares, if applicable, on January 27, 2027 and every five years thereafter, respectively, at \$25.00 per share, together with declared and unpaid dividends. The initial dividend was paid on January 27, 2017 at \$0.4418 per share of Preferred Shares Series 38.
  - (m) These preferred shares contain NVCC provisions necessary for the shares to qualify as Tier 1 regulatory capital under Basel III.

Under NVCC provisions, NVCC preferred shares Series 34, 35, 36, 37, 38 and 39, 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 and 39, 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) issued by the Bank on October 12, 2017.

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.

#### 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.

## 24 Capital Management

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

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



The Bank's regulatory capital ratios were as follows:

As at October 31 (\$ millions)	2017		2016	
	All-in	Transitional	All-in	Transitional
<b>Capital</b>				
Common Equity Tier 1 Capital	\$ 43,352	\$ 46,051	\$ 39,989	\$ 45,816
Net Tier 1 Capital	\$ 49,473	\$ 50,623	\$ 45,066	\$ 47,668
Total regulatory capital	\$ 56,113	\$ 57,222	\$ 53,330	\$ 55,824
<b>Risk-weighted assets/exposures used in calculation of capital ratios</b>				
CET1 risk-weighted assets <sup>(1)(2)</sup>	\$ 376,379	\$ 387,292	\$ 364,048	\$ 368,215
Tier 1 risk-weighted assets <sup>(1)(2)</sup>	\$ 376,379	\$ 387,292	\$ 364,504	\$ 368,215
Total risk-weighted assets <sup>(1)(2)</sup>	\$ 376,379	\$ 387,292	\$ 364,894	\$ 368,215
Leverage exposures	\$ 1,052,891	\$ 1,053,928	\$ 1,010,987	\$ 1,013,346
<b>Capital ratios</b>				
Common Equity Tier 1 Capital ratio	11.5%	11.9%	11.0%	12.4%
Tier 1 capital ratio	13.1%	13.1%	12.4%	12.9%
Total capital ratio	14.9%	14.8%	14.6%	15.2%
Leverage ratio	4.7%	4.8%	4.5%	4.7%

- (1) In accordance with OSFI's requirements, scalars for CVA risk-weighted assets of 0.72, 0.77 and 0.81 (0.64, 0.71 and 0.77 in 2016) 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. As at October 31, 2017, CET1, Tier 1 and Total Capital RWA include Basel I floor adjustments of \$12.8 billion, \$12.6 billion and \$12.4 billion, respectively (2016 - nil).

The Bank substantially exceeded the OSFI capital targets as at October 31, 2017. OSFI has also prescribed an authorized leverage ratio and the Bank was above the regulatory minimum as at October 31, 2017.

## 25 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 104.6 million common shares have been issued as a result of the exercise of options and 15.4 million common shares are committed under outstanding options, leaving 9.0 million common shares available for issuance as options. Outstanding options expire on dates ranging from December 11, 2017 to December 1, 2026.

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, 2017, 5,900 Tandem SARs were outstanding (2016 – 57,800).

The share-based payment liability recognized for vested Tandem SARs as at October 31, 2017 was nil (2016 – \$2 million). The corresponding intrinsic value of this liability as at October 31, 2017 was nil (2016 – \$2 million).

In 2017, an expense of \$0.4 million (2016 – \$0.4 million expense) was recorded in salaries and employee benefits in the Consolidated Statement of Income. This expense is net of gains arising from derivatives used to manage the volatility of share-based payments of \$0.3 million (2016 – \$0.6 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, 2017 was \$177 million (2016 – \$161 million).

In 2017, an expense of \$7 million (2016 – \$7 million) was recorded in salaries and employee benefits in the Consolidated Statement of Income. As at October 31, 2017, future unrecognized compensation cost for non-vested stock options was \$4 million (2016 – \$4 million) which is to be recognized over a weighted-average period of 1.90 years (2016 – 1.80 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.

CONSOLIDATED FINANCIAL STATEMENTS

During fiscal 2017, 60,840 SARs were granted (2016 – 77,298) and as at October 31, 2017, 1,275,608 SARs were outstanding (2016 – 1,541,368), of which 1,229,330 SARs were vested (2016 – 1,478,854).

The share-based payment liability recognized for vested SARs as at October 31, 2017 was \$31 million (2016 – \$25 million). The corresponding intrinsic value of this liability as at October 31, 2017 was \$28 million (2016 – \$25 million).

In 2017, a benefit of \$2 million (2016 – benefit of \$2 million) was recorded in salaries and employee benefits in the Consolidated Statement of Income. This benefit is net of gains arising from derivatives used to manage the volatility of share-based payment of \$20 million (2016 – \$18 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	2017	2016
Assumptions		
Risk-free interest rate%	<b>1.38% - 1.59%</b>	0.56% - 0.81%
Expected dividend yield	<b>3.61%</b>	3.92%
Expected price volatility	<b>15.3% - 23.38%</b>	16.28% - 30.40%
Expected life of option	<b>0.00 - 4.53 years</b>	0.00 - 4.48 years
Fair value		
Weighted-average fair value	<b>\$ 25.72</b>	\$ 17.69

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 2017 and 2016 stock option grants were fair valued using the following weighted-average assumptions and resulting fair value per award:

	2017 Grant	2016 Grant
Assumptions		
Risk-free interest rate %	<b>1.27%</b>	1.20%
Expected dividend yield	<b>3.81%</b>	4.49%
Expected price volatility	<b>17.24%</b>	20.10%
Expected life of option	<b>6.67 years</b>	6.65 years
Fair value		
Weighted-average fair value	<b>\$ 6.51</b>	\$ 5.27

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<sup>(1)</sup>:

As at October 31	2017		2016	
	Number of stock options (000's)	Weighted average exercise price	Number of stock options (000's)	Weighted average exercise price
Outstanding at beginning of year	<b>19,852</b>	<b>\$ 54.55</b>	22,957	\$ 53.19
Granted	<b>1,141</b>	<b>74.14</b>	1,263	60.67
Exercised as options	<b>(5,338)</b>	<b>50.25</b>	(4,224)	48.81
Exercised as Tandem SARs	<b>(33)</b>	<b>52.59</b>	(28)	48.41
Forfeited	<b>(67)</b>	<b>65.97</b>	(92)	62.49
Expired	<b>–</b>	<b>–</b>	(24)	61.47
Outstanding at end of year <sup>(2)</sup>	<b>15,555</b>	<b>\$ 57.42</b>	19,852	\$ 54.55
Exercisable at end of year <sup>(2)</sup>	<b>10,980</b>	<b>\$ 53.44</b>	14,617	\$ 51.57
Available for grant	<b>9,156</b>		10,198	

As at October 31, 2017	Options Outstanding			Options Exercisable	
	Number of stock options (000's)	Weighted average remaining contractual life (years)	Weighted average exercise price	Number of stock options (000's)	Weighted average exercise price
Range of exercise prices					
\$33.89 to \$47.75	<b>2,337</b>	<b>1.78</b>	<b>\$ 43.28</b>	<b>2,337</b>	<b>\$ 43.28</b>
\$49.93 to \$55.21	<b>2,285</b>	<b>3.75</b>	<b>\$ 50.43</b>	<b>2,285</b>	<b>\$ 50.43</b>
\$55.63 to \$60.67	<b>5,585</b>	<b>5.04</b>	<b>\$ 56.74</b>	<b>4,357</b>	<b>\$ 55.63</b>
\$63.98 to \$74.14	<b>5,348</b>	<b>6.85</b>	<b>\$ 67.31</b>	<b>2,001</b>	<b>\$ 63.98</b>
	<b>15,555</b>	<b>4.98</b>	<b>\$ 57.42</b>	<b>10,980</b>	<b>\$ 53.44</b>

(1) Excludes SARs.

(2) Includes options of 5,900 Tandem SARs (2016 – 57,800) and 156,520 options originally issued under HollisWealth plans (2016 – 257,170).

### (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. In Canada, the maximum dollar amounts were increased effective January 1, 2016. During 2017, the Bank's contributions totalled \$54 million (2016 – \$49 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, 2017, an aggregate of 18 million common shares were held under the employee share ownership plans (2016 – 19 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 2017, an aggregate expense of \$203 million (2016 – \$237 million) was recorded in salaries and employee benefits in the Consolidated Statement of Income for these plans. This expense includes gains from derivatives used to manage the volatility of share-based payment of \$160 million (2016 – \$121 million gains).

As at October 31, 2017, the share-based payment liability recognized for vested awards under these plans was \$946 million (2016 – \$849 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, 2017, there were 755,472 units (2016 – 703,168) awarded and outstanding of which 684,017 units were vested (2016 – 703,168).

#### 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, 2017, there were 299,867 units outstanding (2016 – 348,197).

#### 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, 2017, there were 2,197,100 units (2016 – 2,214,543) awarded and outstanding of which 1,497,340 were vested (2016 – 1,537,076).

#### 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, 2017, there were 8,250,143 units (2016 – 8,588,753) outstanding subject to performance criteria, of which 6,718,738 units were vested (2016 – 7,035,242).

#### 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, 2017, there were 1,587,037 units outstanding (2016 – 1,802,540).

## 26 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)	2017	2016	2015
<b>Provision for income taxes in the Consolidated Statement of Income:</b>			
<b>Current income taxes:</b>			
Domestic:			
Federal	\$ 533	\$ 467	\$ 528
Provincial	424	386	459
Adjustments related to prior periods	24	4	23
Foreign	903	935	897
Adjustments related to prior periods	(29)	(19)	2
	<b>1,855</b>	<b>1,773</b>	<b>1,909</b>
<b>Deferred income taxes:</b>			
Domestic:			
Federal	33	141	(16)
Provincial	16	70	(20)
Foreign	129	46	(20)
	<b>178</b>	<b>257</b>	<b>(56)</b>
Total provision for income taxes in the Consolidated Statement of Income	<b>\$2,033</b>	<b>\$ 2,030</b>	<b>\$ 1,853</b>
<b>Provision for income taxes in the Consolidated Statement of Changes in Equity:</b>			
Current income taxes	\$ 82	\$ (158)	\$ (496)
Deferred income taxes	198	(168)	(8)
	<b>280</b>	<b>(326)</b>	<b>(504)</b>
Reported in:			
Other Comprehensive Income	275	(322)	(464)
Retained earnings	(1)	(10)	(43)
Common shares	1	1	1
Other reserves	5	5	2
Total provision for income taxes in the Consolidated Statement of Changes in Equity	<b>280</b>	<b>(326)</b>	<b>(504)</b>
Total provision for income taxes	<b>\$2,313</b>	<b>\$ 1,704</b>	<b>\$ 1,349</b>
<b>Provision for income taxes in the Consolidated Statement of Income includes:</b>			
Deferred tax expense (benefit) relating to origination/reversal of temporary differences	\$ 191	\$ 372	\$ 118
Deferred tax expense (benefit) of tax rate changes	(2)	(4)	(2)
Deferred tax expense (benefit) of previously unrecognized tax losses, tax credits and temporary differences	(11)	(111)	(172)
	<b>\$ 178</b>	<b>\$ 257</b>	<b>\$ (56)</b>

### (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:

For the year ended October 31 (\$ millions)	2017		2016		2015	
	Amount	Percent of pre-tax income	Amount	Percent of pre-tax income	Amount	Percent of pre-tax income
Income taxes at Canadian statutory rate	\$ 2,715	26.4%	\$ 2,485	26.4%	\$ 2,386	26.3%
Increase (decrease) in income taxes resulting from:						
Lower average tax rate applicable to subsidiaries and foreign branches	(286)	(2.8)	(234)	(2.5)	(233)	(2.6)
Tax-exempt income from securities	(407)	(3.9)	(220)	(2.3)	(281)	(3.1)
Deferred income tax effect of substantively enacted tax rate changes	(2)	–	(4)	–	(2)	–
Other, net	13	0.1	3	–	(17)	(0.2)
Total income taxes and effective tax rate	<b>\$ 2,033</b>	<b>19.8%</b>	<b>\$ 2,030</b>	<b>21.6%</b>	<b>\$ 1,853</b>	<b>20.4%</b>

**(c) Deferred taxes**

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

October 31 (\$ millions)	Statement of Income		Statement of Financial Position	
	For the year ended		As at	
	2017	2016	2017	2016
Deferred tax assets:				
Loss carryforwards	\$ 62	\$ 57	\$ 417	\$ 484
Allowance for credit losses	45	3	793	852
Deferred compensation	(25)	(14)	219	224
Deferred income	(124)	18	405	289
Property and equipment	(19)	99	133	101
Pension and other post-retirement benefits	(6)	18	720	937
Securities	(17)	139	169	162
Other	(169)	57	640	511
<b>Total deferred tax assets</b>	<b>\$ (253)</b>	<b>\$ 377</b>	<b>\$3,496</b>	<b>\$ 3,560</b>
Deferred tax liabilities:				
Deferred income	\$ (21)	\$ 5	\$ 133	\$ 122
Property and equipment	(32)	7	138	75
Pension and other post-retirement benefits	(9)	25	136	146
Securities	111	19	126	221
Intangible assets	(53)	(129)	1,094	1,043
Other	(427)	193	853	543
<b>Total deferred tax liabilities</b>	<b>\$ (431)</b>	<b>\$ 120</b>	<b>\$2,480</b>	<b>\$ 2,150</b>
<b>Net deferred tax assets (liabilities)<sup>(1)</sup></b>	<b>\$ 178</b>	<b>\$ 257</b>	<b>\$1,016</b>	<b>\$ 1,410</b>

(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 \$1,016 (2016 – \$1,410) are represented by deferred tax assets of \$1,713 (2016 – \$2,021), and deferred tax liabilities of \$697 (2016 – \$611) on the Consolidated Statement of Financial Position.

The major changes to net deferred taxes were as follows:

For the year ended October 31 (\$ millions)	2017	2016
Balance at beginning of year	\$ 1,410	\$ 1,435
Deferred tax benefit (expense) for the year recorded in income	(178)	(257)
Deferred tax benefit (expense) for the year recorded in equity	(198)	168
Acquired in business combinations	–	71
Other	(18)	(7)
<b>Balance at end of year</b>	<b>\$ 1,016</b>	<b>\$ 1,410</b>

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 \$82 million (October 31, 2016 – \$55 million). The amount related to unrecognized losses is \$9 million, which will expire as follows: \$4 million in 2021 and beyond and \$5 million have no fixed expiry date.

Included in the net deferred tax asset are tax benefits of \$92 million (2016 – \$73 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, 2017 is \$27 billion (2016 – \$24 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. 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.

## 27 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. As the administrator of the SPP, the Bank has established a well-defined governance structure and policies to ensure 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, 2016. 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 are 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. Prior to 2016, the discount rate used to determine the annual benefit expense was the same as the rate used to determine the defined benefit obligation at the beginning of the period. Beginning in 2016, 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 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, 2017	Pension plans			Other benefit plans	
	Canada			Canada	International
	SPP	Other	International		
Percentage of total benefit obligations	<b>74%</b>	<b>11%</b>	<b>15%</b>	<b>63%</b>	<b>37%</b>
Percentage of total plan assets	<b>76%</b>	<b>6%</b>	<b>18%</b>	<b>18%</b>	<b>82%</b>
Percentage of total benefit expense <sup>(1)</sup>	<b>80%</b>	<b>16%</b>	<b>4%</b>	<b>51%</b>	<b>49%</b>

For the year ended October 31, 2016	Pension plans			Other benefit plans	
	Canada			Canada	International
	SPP	Other	International		
Percentage of total benefit obligations	73%	11%	16%	63%	37%
Percentage of total plan assets	76%	6%	18%	19%	81%
Percentage of total benefit expense <sup>(1)</sup>	76%	17%	7%	46%	54%

(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 2017, and the two prior years.

Contributions to the principal plans for the year ended October 31 (\$ millions)	2017	2016	2015
Defined benefit pension plans (cash contributions to fund the plans, including paying beneficiaries under the unfunded pension arrangements)			
SPP	<b>\$ 286</b>	\$ 187	\$ 236
All other plans	<b>185</b>	77	60
Other benefit plans (cash contributions mainly in the form of benefit payments to beneficiaries)	<b>51</b>	45	42
Defined contribution pension plans (cash contributions)	<b>35</b>	31	29
<b>Total contributions<sup>(1)</sup></b>	<b>\$ 557</b>	<b>\$ 340</b>	<b>\$ 367</b>

(1) Based on preliminary estimates, the Bank expects to make contributions of \$290 to the SPP, \$35 to all other defined benefit pension plans, \$58 to other benefit plans and \$39 to all other defined contribution plans for the year ending October 31, 2018.

## 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		
	2017	2016	2015	2017	2016	2015
<b>Benefit obligation</b>						
Benefit obligation of plans that are wholly unfunded	<b>\$ 418</b>	\$ 408	\$ 373	<b>\$ 1,324</b>	\$ 1,310	\$ 1,231
Benefit obligation of plans that are wholly or partly funded	<b>8,424</b>	8,731	7,740	<b>334</b>	372	408
<b>Funded status</b>						
Benefit obligation of plans that are wholly or partly funded	<b>\$8,424</b>	\$ 8,731	\$ 7,740	<b>\$ 334</b>	\$ 372	\$ 408
Fair value of assets	<b>8,329</b>	7,770	7,615	<b>266</b>	284	307
Excess (deficit) of fair value of assets over benefit obligation of wholly or partly funded plans	<b>\$ (95)</b>	\$ (961)	\$ (125)	<b>\$ (68)</b>	\$ (88)	\$ (101)
Benefit obligation of plans that are wholly unfunded	<b>418</b>	408	373	<b>1,324</b>	1,310	1,231
Excess (deficit) of fair value of assets over total benefit obligation	<b>\$ (513)</b>	\$ (1,369)	\$ (498)	<b>\$(1,392)</b>	\$ (1,398)	\$ (1,332)
Effect of asset limitation and minimum funding requirement	<b>(39)</b>	(60)	(41)	<b>-</b>	-	-
<b>Net asset (liability) at end of year</b>	<b>\$ (552)</b>	\$ (1,429)	\$ (539)	<b>\$(1,392)</b>	\$ (1,398)	\$ (1,332)

## d) Financial information

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

For the year ended October 31 (\$ millions)	Pension plans			Other benefit plans		
	2017	2016	2015	2017	2016	2015
<b>Change in benefit obligation</b>						
Benefit obligation at beginning of year	\$ 9,139	\$ 8,113	\$ 7,947	\$ 1,682	\$ 1,639	\$ 1,619
Current service cost	330	284	304	39	39	43
Interest cost on benefit obligation	297	314	350	72	77	84
Employee contributions	24	24	23	–	–	–
Benefits paid	(724)	(593)	(498)	(76)	(71)	(73)
Actuarial loss (gain)	(46)	1,119	152	(36)	95	(52)
Past service cost	–	(16)	(241)	4	(77)	3
Business combination	–	–	–	1	9	–
Settlements	(157)	–	(48)	–	–	(2)
Foreign exchange	(21)	(106)	124	(28)	(29)	17
Benefit obligation at end of year	\$ 8,842	\$ 9,139	\$ 8,113	\$ 1,658	\$ 1,682	\$ 1,639
<b>Change in fair value of assets</b>						
Fair value of assets at beginning of year	7,770	7,615	7,323	284	307	341
Interest income on fair value of assets	273	310	343	19	22	23
Return on plan assets in excess of interest income on fair value of assets	700	275	55	1	5	(12)
Employer contributions	471	264	296	51	45	42
Employee contributions	24	24	23	–	–	–
Benefits paid	(724)	(593)	(498)	(76)	(71)	(73)
Administrative expenses	(13)	(12)	(12)	–	–	–
Business combination	–	–	–	–	2	–
Settlements	(157)	–	(39)	(1)	–	–
Foreign exchange	(15)	(113)	124	(12)	(26)	(14)
Fair value of assets at end of year	\$ 8,329	\$ 7,770	\$ 7,615	\$ 266	\$ 284	\$ 307
<b>Funded status</b>						
Excess (deficit) of fair value of assets over benefit obligation at end of year	(513)	(1,369)	(498)	(1,392)	(1,398)	(1,332)
Effect of asset limitation and minimum funding requirement <sup>(1)</sup>	(39)	(60)	(41)	–	–	–
Net asset (liability) at end of year	\$ (552)	\$ (1,429)	\$ (539)	\$ (1,392)	\$ (1,398)	\$ (1,332)
Recorded in:						
Other assets in the Bank's Consolidated Statement of Financial Position	256	184	183	1	–	–
Other liabilities in the Bank's Consolidated Statement of Financial Position	(808)	(1,613)	(722)	(1,393)	(1,398)	(1,332)
Net asset (liability) at end of year	\$ (552)	\$ (1,429)	\$ (539)	\$ (1,392)	\$ (1,398)	\$ (1,332)
<b>Annual benefit expense</b>						
Current service cost	330	284	304	39	39	43
Net interest expense (income)	29	9	15	53	55	60
Administrative expenses	11	13	10	–	–	–
Past service costs	–	(16)	(241)	4	(77)	4
Amount of settlement (gain) loss recognized	–	–	(9)	–	–	(2)
Remeasurement of other long-term benefits	–	–	–	(3)	(20)	4
Benefit expense (income) recorded in the Consolidated Statement of Income	\$ 370	\$ 290	\$ 79	\$ 93	\$ (3)	\$ 109
Defined contribution benefit expense	\$ 35	\$ 31	\$ 29	\$ –	\$ –	\$ –
<b>Remeasurements</b>						
(Return) on plan assets in excess of interest income on fair value of assets	(700)	(275)	(55)	1	(3)	13
Actuarial loss (gain) on benefit obligation	(46)	1,119	152	(35)	113	(58)
Change in the asset limitation	(25)	18	(49)	–	–	–
Remeasurements recorded in OCI	\$ (771)	\$ 862	\$ 48	\$ (34)	\$ 110	\$ (45)
<b>Total benefit cost</b>	\$ (366)	\$ 1,183	\$ 156	\$ 59	\$ 107	\$ 64
<b>Additional details on actual return on assets and actuarial (gains) and losses</b>						
Actual return on assets (net of administrative expenses)	\$ 960	\$ 573	\$ 386	\$ 20	\$ 27	\$ 11
Actuarial (gains) and losses from changes in demographic assumptions	(6)	9	91	–	(5)	(22)
Actuarial (gains) and losses from changes in financial assumptions	(71)	1,116	22	(13)	133	(28)
Actuarial (gains) and losses from changes in experience	31	(6)	39	(23)	(33)	(2)
<b>Additional details on fair value of pension plan assets invested</b>						
In Scotiabank securities (stock, bonds)	457	410	404	4	–	–
In property occupied by Scotiabank	4	5	5	–	–	–
<b>Change in asset ceiling/onerous liability</b>						
Asset ceiling /onerous liability at end of prior year	60	41	77	–	–	–
Interest expense	5	5	8	–	–	–
Remeasurements	(25)	18	(49)	–	–	–
Foreign exchange	(1)	(4)	5	–	–	–
Asset ceiling /onerous liability at end of year	\$ 39	\$ 60	\$ 41	\$ –	\$ –	\$ –

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



### e) Maturity profile of the defined benefit obligation

The weighted average duration of the total benefit obligation at October 31, 2017 is 15.3 years (2016 – 15.3 years, 2015 – 15.3 years).

For the year ended October 31	Pension plans			Other benefit plans		
	2017	2016	2015	2017	2016	2015
Disaggregation of the benefit obligation (%)						
Canada						
Active members	58%	60%	58%	29%	33%	35%
Inactive and retired members	42%	40%	42%	71%	67%	65%
Total	100%	100%	100%	100%	100%	100%
Mexico						
Active members	27%	29%	30%	55%	57%	58%
Inactive and retired members	73%	71%	70%	45%	43%	42%
Total	100%	100%	100%	100%	100%	100%
United States						
Active members	48%	33%	39%	35%	38%	37%
Inactive and retired members	52%	67%	61%	65%	62%	63%
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:

For the year ended October 31	Pension plans			Other benefit plans		
	2017	2016	2015	2017	2016	2015
Benefit obligation at end of year						
Discount rate – all plans	3.90%	3.86%	4.64%	4.86%	4.74%	5.33%
Discount rate – Canadian plans only	3.60%	3.60%	4.40%	3.53%	3.42%	4.27%
Rate of increase in future compensation <sup>(1)</sup>	2.76%	2.72%	2.75%	4.07%	4.09%	4.41%
Benefit expense (income) for the year						
Discount rate – All plans						
Discount rate for defined benefit obligations	3.86%	4.64%	4.46%	4.74%	5.33%	5.24%
Discount rate for net interest cost	3.33%	4.03%	4.46%	4.42%	4.91%	5.24%
Discount rate for service cost	4.01%	4.83%	4.46%	5.09%	5.62%	5.24%
Discount rate for interest on service cost	3.64%	4.31%	4.46%	4.94%	5.56%	5.24%
Discount rate – Canadian plans only						
Discount rate for defined benefit obligations	3.60%	4.40%	4.20%	3.42%	4.27%	4.12%
Discount rate for net interest cost	3.00%	3.70%	4.20%	2.98%	3.67%	4.12%
Discount rate for service cost	3.70%	4.60%	4.20%	3.75%	4.54%	4.12%
Discount rate for interest on service cost	3.30%	4.00%	4.20%	3.56%	4.44%	4.12%
Rate of increase in future compensation <sup>(1)</sup>	2.72%	2.75%	2.77%	4.09%	4.41%	4.51%
Health care cost trend rates at end of year						
Initial rate	n/a	n/a	n/a	5.99%	6.12%	6.29%
Ultimate rate	n/a	n/a	n/a	4.93%	4.93%	4.97%
Year ultimate rate reached	n/a	n/a	n/a	2030	2030	2030
Assumed life expectancy in Canada (years)						
Life expectancy at 65 for current pensioners – male	23.2	23.2	23.1	23.2	23.2	23.1
Life expectancy at 65 for current pensioners – female	24.4	24.3	24.3	24.4	24.3	24.3
Life expectancy at 65, for future pensioners currently aged 45 – male	24.2	24.2	24.1	24.2	24.2	24.1
Life expectancy at 65, for future pensioners currently aged 45 – female	25.3	25.3	25.2	25.3	25.3	25.2
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	23.0	22.3	22.7	23.0	22.3
Life expectancy at 65 for current pensioners – female	24.4	24.7	23.5	24.4	24.7	23.5
Life expectancy at 65, for future pensioners currently aged 45 – male	24.3	23.7	23.0	24.3	23.7	23.0
Life expectancy at 65, for future pensioners currently aged 45 – female	25.9	25.6	25.4	25.9	25.6	25.4

(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.

For the year ended October 31, 2017 (\$ millions)	Pension plans		Other benefit plans	
	Benefit obligation	Benefit expense	Benefit obligation	Benefit expense
Impact of the following changes:				
1% decrease in discount rate	\$ 1,529	\$ 106	\$ 257	\$ 13
0.25% increase in rate of increase in future compensation	94	9	1	–
1% increase in health care cost trend rate	n/a	n/a	153	16
1% decrease in health care cost trend rate	n/a	n/a	(122)	(12)
1 year increase in Canadian life expectancy	162	9	24	1
1 year increase in Mexican life expectancy	3	–	3	–
1 year increase in the United States life expectancy	5	–	5	–

### 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 rare, and typically reflect a change in the pension plan's situation (e.g. a plan termination). 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.

Asset category %	Pension plans			Other benefit plans		
	Actual 2017	Actual 2016	Actual 2015	Actual 2017	Actual 2016	Actual 2015
Cash and cash equivalents	2%	2%	2%	1%	2%	2%
Equity investments						
Quoted in an active market	43%	44%	44%	46%	45%	45%
Non quoted	16%	16%	19%	–%	–%	–%
	59%	60%	63%	46%	45%	45%
Fixed income investments						
Quoted in an active market	5%	4%	5%	32%	29%	28%
Non quoted	26%	27%	25%	21%	24%	25%
	31%	31%	30%	53%	53%	53%
Property						
Quoted in an active market	–%	–%	–%	–%	–%	–%
Non quoted	–%	–%	–%	–%	–%	–%
	–%	–%	–%	–%	–%	–%
Other						
Quoted in an active market	–%	1%	–%	–%	–%	–%
Non quoted	8%	6%	5%	–%	–%	–%
	8%	7%	5%	–%	–%	–%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Target asset allocation at October 31, 2017  
Asset category %

Asset category %	Pension plans	Other benefit plans
Cash and cash equivalents	–%	2%
Equity investments	59%	45%
Fixed income investments	32%	53%
Property	1%	–%
Other	8%	–%
<b>Total</b>	<b>100%</b>	<b>100%</b>

## 28 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 of the consolidated financial statements. 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, 2017

Taxable equivalent basis (\$ millions)	Canadian Banking	International Banking	Global Banking and Markets	Other <sup>(1)</sup>	Total
Net interest income <sup>(2)</sup>	\$ 7,363	\$ 6,726	\$ 1,336	\$ (390)	\$ 15,035
Non-interest income <sup>(3)</sup>	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 <sup>(1)</sup>	Total
Net interest income <sup>(2)</sup>	\$ 7,024	\$ 6,359	\$ 1,293	\$ (384)	\$ 14,292
Non-interest income <sup>(3)</sup>	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).

## CONSOLIDATED FINANCIAL STATEMENTS

For the year ended October 31, 2015

Taxable equivalent basis (\$ millions)	Canadian Banking	International Banking	Global Banking and Markets	Other <sup>(1)</sup>	Total
Net interest income <sup>(2)</sup>	\$ 6,415	\$ 5,706	\$ 1,071	\$ (100)	\$ 13,092
Non-interest income <sup>(3)</sup>	4,832	3,137	2,953	35	10,957
Total revenues	11,247	8,843	4,024	(65)	24,049
Provision for credit losses	687	1,128	67	60	1,942
Depreciation and amortization	272	242	57	13	584
Non-interest expenses	5,742	4,853	1,789	73	12,457
Income tax expense	1,202	568	558	(475)	1,853
Net income	\$ 3,344	\$ 2,052	\$ 1,553	\$ 264	\$ 7,213
Net income attributable to non-controlling interests in subsidiaries	–	199	–	–	199
Net income attributable to equity holders of the Bank	3,344	1,853	1,553	264	7,014
Average assets (\$ billions)	300	128	342	91	861
Average liabilities (\$ billions)	218	94	240	257	809

(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, 2015 amounting to \$390, 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 – \$476 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, 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 <sup>(1)</sup>	6,924	830	536	635	409	455	2,502	12,291
Total revenues <sup>(2)</sup>	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
	\$ 4,742	\$ 551	\$ 475	\$ 606	\$ 374	\$ 137	\$ 1,573	\$ 8,458
Corporate adjustments								(215)
Net income								\$ 8,243
Net income attributable to non-controlling interests in subsidiaries								238
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 <sup>(1)</sup>	6,893	871	554	600	325	419	2,409	12,071
Total revenues <sup>(2)</sup>	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
	\$ 4,465	\$ 450	\$ 363	\$ 575	\$ 325	\$ 134	\$ 1,425	\$ 7,737
Corporate adjustments								(369)
Net income								\$ 7,368
Net income attributable to non-controlling interests in subsidiaries								251
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.

For the year ended October 31, 2015 (\$ millions)	Canada	United States	Mexico	Peru	Chile	Colombia	Other International	Total
Net interest income	\$ 6,458	\$ 472	\$ 1,246	\$ 1,077	\$ 554	\$ 677	\$ 2,631	\$ 13,115
Non-interest income <sup>(1)</sup>	6,272	882	561	601	231	372	2,163	11,082
Total revenues <sup>(2)</sup>	12,730	1,354	1,807	1,678	785	1,049	4,794	24,197
Provision for credit losses	728	6	260	266	108	246	268	1,882
Non-interest expenses	6,936	507	1,160	744	431	541	2,745	13,064
Income tax expense	1,038	267	27	195	24	84	401	2,036
	\$ 4,028	\$ 574	\$ 360	\$ 473	\$ 222	\$ 178	\$ 1,380	\$ 7,215
Corporate adjustments								(2)
<b>Net income</b>								<b>\$ 7,213</b>
Net income attributable to non-controlling interests in subsidiaries								199
Net income attributable to equity holders of the Bank								\$ 7,014
<b>Total average assets (\$ billions)</b>	\$ 502	\$ 125	\$ 26	\$ 21	\$ 17	\$ 10	\$ 148	\$ 849
Corporate adjustments								12
Total average assets, including corporate adjustments								\$ 861

(1) Includes net income from investments in associated corporations for Canada – \$66; Peru – \$4 and Other International – \$472.

(2) Revenues are attributed to countries based on where services are performed or assets are recorded.

## 29 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)	2017	2016
Salaries and cash incentives <sup>(1)</sup>	\$ 17	\$ 20
Equity-based payment <sup>(2)</sup>	25	24
Pension and other benefits <sup>(1)</sup>	3	3
Total	\$ 45	\$ 47

(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 25 for further details of these plans.

### Loans and deposits of key management personnel

As at October 31 (\$ millions)	2017	2016
Loans	\$ 6	\$ 6
Deposits	\$ 8	\$ 11

The Bank's committed credit exposure to companies controlled by directors totaled \$145.2 million as at October 31, 2017 (2016 – \$99.5 million), while actual utilized amounts were \$11.5 million (2016 – \$3.9 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)	2017	2016	2015
Net income / (loss)	\$ (46)	\$ (45)	\$ (27)
Loans	703	788	747
Deposits	217	338	187
Guarantees and commitments	114	99	84

### Scotiabank principal pension plan

The Bank manages assets of \$3.0 billion (2016 – \$1.9 billion) which is a portion of the Scotiabank principal pension plan assets and earned \$3.7 million (2016 – \$3.9 million) in fees.

### 30 Principal Subsidiaries and Non-Controlling Interests in Subsidiaries

#### (a) Principal subsidiaries<sup>(1)</sup>

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	
		2017	2016 <sup>(2)</sup>
<b>Canadian</b>			
1832 Asset Management L.P.	Toronto, Ontario	\$ 2,006	\$ 1,707
1985275 Ontario Inc. (previously HollisWealth Inc.) <sup>(3)</sup>	Toronto, Ontario	3,604	3,427
ADS Canadian Bank (previously Hollis Canadian Bank)	Toronto, Ontario	399	387
BNS Investments Inc.	Toronto, Ontario	13,551	13,277
Montreal Trust Company of Canada	Montreal, Quebec		
National Trustco Inc.	Toronto, Ontario	574	716
The Bank of Nova Scotia Trust Company	Toronto, Ontario		
National Trust Company	Stratford, Ontario		
RoyNat Inc.	Calgary, Alberta	239	185
Scotia Capital Inc.	Toronto, Ontario	1,024	649
Scotia Dealer Advantage Inc.	Burnaby, British Columbia	567	504
Scotia Life Insurance Company	Toronto, Ontario	189	167
Scotia Mortgage Corporation	Toronto, Ontario	615	926
Scotia Securities Inc.	Toronto, Ontario	34	32
Tangerine Bank	Toronto, Ontario	3,488	3,489
<b>International</b>			
Banco Colpatría Multibanca Colpatría S.A. (51%)	Bogota, Colombia	1,160	1,194
The Bank of Nova Scotia Berhad	Kuala Lumpur, Malaysia	303	316
The Bank of Nova Scotia International Limited	Nassau, Bahamas	18,223	18,022
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.			
Grupo Financiero Scotiabank Inverlat, S.A. de C.V. (97.4%)	Mexico, D.F., Mexico	3,544	3,204
Nova Scotia Inversiones Limitada	Santiago, Chile	3,325	3,056
Scotiabank Chile S.A (99.6%)	Santiago, Chile		
Scotia Holdings (US) Inc. <sup>(4)</sup>	Houston, Texas		
Scotiabanc Inc.	Houston, Texas		
Scotia Capital (USA) Inc. <sup>(4)(5)</sup>	New York, New York		
Scotia International Limited	Nassau, Bahamas	642	641
Scotiabank Anguilla Limited	The Valley, Anguilla		
Scotiabank Brasil S.A. Banco Multiplo	Sao Paulo, Brazil	223	227
Scotiabank Caribbean Holdings Ltd.	Bridgetown, Barbados	1,710	1,634
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.			
Scotiabank Uruguay S.A.	Montevideo, Uruguay	496	491
Scotiabank de Puerto Rico	San Juan, Puerto Rico	1,395	1,361
Scotiabank El Salvador, S.A. (99.4%)	San Salvador, El Salvador	659	651
Scotiabank Europe plc	London, United Kingdom	2,400	2,539
Scotiabank Peru S.A.A. (98.05%)	Lima, Peru	4,518	3,953

(1) The Bank (or immediate parent of an entity) owns 100% of the outstanding voting shares of each subsidiary unless otherwise noted.

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

(3) Effective November 1, 2017, the name was changed to 1985275 Ontario Inc.

(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 October 31				
	2017			2016	
	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
Banco Colpatría Multibanca Colpatría S.A. <sup>(1)</sup>	49.0%	\$ 445	\$ 38	\$ 471	\$ 25
Scotia Group Jamaica Limited	28.2%	300	17	311	17
Scotiabank Trinidad and Tobago Limited	49.1%	354	56	359	54
Cencosud Administradora de Tarjetas S.A.	49.0%	131	14	139	10
Other	0.1% - 49.0% <sup>(2)</sup>	362	8	290	10
<b>Total</b>		<b>\$ 1,592</b>	<b>\$ 133</b>	<b>\$ 1,570</b>	<b>\$ 116</b>

(1) Non-controlling interest holders for Banco Colpatría Multibanca Colpatría 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.

(2) Range of non-controlling interest % for other subsidiaries.

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

(\$ millions)	As at and for the year ended October 31, 2017				As at and for the year ended October 31, 2016			
	Revenue	Total comprehensive income	Total assets	Total liabilities	Revenue	Total comprehensive income	Total assets	Total liabilities
<b>Total</b>	<b>\$ 2,224</b>	<b>\$ 362</b>	<b>\$ 24,038</b>	<b>\$ 20,702</b>	<b>\$ 2,048</b>	<b>\$ 426</b>	<b>\$ 22,976</b>	<b>\$ 19,849</b>

## 31 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)	2017	2016	2015
<b>Banking</b>			
Card revenues	\$ 1,514	\$ 1,359	\$ 1,089
Deposit and payment services	1,324	1,279	1,235
Credit fees	1,153	1,154	1,053
Other	472	436	406
	<b>4,463</b>	<b>4,228</b>	<b>3,783</b>
Banking fee related expenses	608	559	423
<b>Total banking</b>	<b>\$ 3,855</b>	<b>\$ 3,669</b>	<b>\$ 3,360</b>
<b>Wealth management</b>			
Mutual funds	\$ 1,639	\$ 1,624	\$ 1,619
Brokerage fees	1,021	1,010	1,006
Investment management and trust	658	648	644
<b>Total wealth management</b>	<b>\$ 3,318</b>	<b>\$ 3,282</b>	<b>\$ 3,269</b>

## 32 Trading Revenues

The following table presents details of trading revenues.

For the year ended October 31 (\$ millions)	2017	2016	2015
Interest rate and credit	\$ 575	\$ 613	\$ 400
Equities	47	101	177
Commodities	295	376	345
Foreign exchange	250	262	201
Other	92	51	62
<b>Total</b>	<b>\$ 1,259</b>	<b>\$ 1,403</b>	<b>\$ 1,185</b>

### 33 Earnings Per Share

For the year ended October 31 (\$ millions)

	2017	2016	2015
<b>Basic earnings per common share</b>			
Net income attributable to common shareholders	<b>\$ 7,876</b>	\$ 6,987	\$ 6,897
Weighted average number of common shares outstanding (millions)	<b>1,203</b>	1,204	1,210
Basic earnings per common share <sup>(1)</sup> (in dollars)	<b>\$ 6.55</b>	\$ 5.80	\$ 5.70
<b>Diluted earnings per common share</b>			
Net income attributable to common shareholders	<b>\$ 7,876</b>	\$ 6,987	\$ 6,897
Adjustments to net income due to share-based payment options and others <sup>(2)</sup>	<b>59</b>	83	86
Net income attributable to common shareholders (diluted)	<b>\$ 7,935</b>	\$ 7,070	\$ 6,983
Weighted average number of common shares outstanding (millions)	<b>1,203</b>	1,204	1,210
Adjustments to average shares due to share-based payment options and others <sup>(2)</sup> (millions)	<b>20</b>	22	22
Weighted average number of diluted common shares outstanding (millions)	<b>1,223</b>	1,226	1,232
Diluted earnings per common share <sup>(1)</sup> (in dollars)	<b>\$ 6.49</b>	\$ 5.77	\$ 5.67

(1) Earnings per share calculations are based on full dollar and share amounts.

(2) Certain tandem stock appreciation rights or options that the Bank may settle at its own discretion by issuing common shares were not included in the calculation of diluted earnings per share as they were anti-dilutive.

### 34 Guarantees, Commitments and Pledged Assets

#### (a) Guarantees

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

	2017	2016
	Maximum potential amount of future payments <sup>(1)</sup>	Maximum potential amount of future payments <sup>(1)</sup>
As at October 31 (\$ millions)		
Standby letters of credit and letters of guarantee	<b>\$ 35,523</b>	\$ 34,520
Liquidity facilities	<b>4,996</b>	5,814
Derivative instruments	<b>5,398</b>	4,129
Indemnifications	<b>587</b>	597

(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, 2017, \$4 million (2016 – \$19 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, 2017, \$274 million (2016 – \$333 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, 2017, \$2 million (2016 – \$3 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)	2017	2016
Commercial letters of credit	\$ 821	\$ 777
Commitments to extend credit <sup>(1)</sup>		
Original term to maturity of one year or less	57,321	69,865
Original term to maturity of more than one year	128,345	104,380
Securities lending	40,535	38,668
Securities purchase and other commitments	614	538
<b>Total</b>	<b>\$ 227,636</b>	<b>\$ 214,228</b>

(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)	2017	2016
Within one year	\$ 349	\$ 344
After one year but not more than five years	967	922
More than five years	593	536
<b>Total</b>	<b>\$1,909</b>	<b>\$ 1,802</b>

Building rent expense, included in premises and technology expense in the Consolidated Statement of Income, was \$444 million (2016 – \$428 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)	2017	2016
<b>Assets pledged to:</b>		
Bank of Canada <sup>(1)</sup>	\$ 25	\$ 25
Foreign governments and central banks <sup>(1)</sup>	2,653	3,080
Clearing systems, payment systems and depositories <sup>(1)</sup>	1,195	1,400
Assets pledged in relation to exchange-traded derivative transactions	2,181	2,128
Assets pledged in relation to over-the-counter derivative transactions	8,126	10,505
Assets pledged as collateral related to securities borrowing and lending	115,987	107,901
Assets pledged in relation to covered bond program (Note 14)	27,806	30,491
Assets pledged in relation to other securitization programs (Note 14)	4,801	3,919
Assets pledged under CMHC programs (Note 13)	20,471	20,672
Other	643	1,031
<b>Total assets pledged</b>	<b>\$ 183,888</b>	<b>\$ 181,152</b>
Obligations related to securities sold under repurchase agreements	86,789	87,402
<b>Total<sup>(2)</sup></b>	<b>\$ 270,677</b>	<b>\$ 268,554</b>

(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**

The Bank and its subsidiaries have entered into certain long-term executory contracts, relating to outsourced services. The significant outsourcing arrangements have variable pricing based on utilization and are cancellable with notice.

**35 Financial Instruments – Risk Management**

The Bank’s principal business activities result in a balance sheet that consists primarily of financial instruments. In addition, the Bank uses derivative financial instruments for both trading and hedging purposes. The principal financial risks that arise from transacting financial instruments include credit risk, liquidity risk and market risk. The Bank’s framework to monitor, evaluate and manage these risks is consistent with that in place as at October 31, 2016:

- 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 6. Note 9 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 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, the provisions for credit losses and the collective allowance on performing loans. 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 9(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)	2017				2016
	Exposure at default <sup>(1)</sup>				Total
Category	Drawn <sup>(2)</sup>	Undrawn commitments	Other exposures <sup>(3)</sup>	Total	
<b>By counterparty type</b>					
Non-retail					
AIRB portfolio					
Corporate	\$ 134,006	\$ 75,962	\$ 75,223	\$ 285,191	\$ 268,154
Bank	19,734	2,560	18,609	40,903	49,662
Sovereign	189,400	820	5,209	195,429	187,698
	<b>343,140</b>	<b>79,342</b>	<b>99,041</b>	<b>521,523</b>	<b>505,514</b>
Standardized portfolio					
Corporate	50,614	5,252	3,298	59,164	55,682
Bank	2,489	96	34	2,619	2,278
Sovereign	6,134	203	–	6,337	8,412
	<b>59,237</b>	<b>5,551</b>	<b>3,332</b>	<b>68,120</b>	<b>66,372</b>
Total non-retail	<b>\$ 402,377</b>	<b>\$ 84,893</b>	<b>\$ 102,373</b>	<b>\$ 589,643</b>	<b>\$ 571,886</b>
Retail					
AIRB portfolio					
Real estate secured	127,804	15,356	–	143,160	121,358
Qualifying revolving	16,939	27,445	–	44,384	37,825
Other retail	30,372	1,300	–	31,672	29,045
	<b>\$ 175,115</b>	<b>\$ 44,101</b>	<b>\$ –</b>	<b>\$ 219,216</b>	<b>\$ 188,228</b>
Standardized portfolio					
Real estate secured	34,002	–	–	34,002	30,865
Other retail	35,552	–	–	35,552	33,936
	<b>69,554</b>	<b>–</b>	<b>–</b>	<b>69,554</b>	<b>64,801</b>
Total retail	<b>\$ 244,669</b>	<b>\$ 44,101</b>	<b>\$ –</b>	<b>\$ 288,770</b>	<b>\$ 253,029</b>
Total	<b>\$ 647,046</b>	<b>\$ 128,994</b>	<b>\$ 102,373</b>	<b>\$ 878,413</b>	<b>\$ 824,915</b>
<b>By geography<sup>(4)</sup></b>					
Canada	\$ 379,297	\$ 82,001	\$ 40,926	\$ 502,224	\$ 468,923
United States	88,623	31,008	37,755	157,386	143,808
Mexico	26,841	1,152	2,535	30,528	26,873
Peru	23,767	1,551	3,415	28,733	28,328
Chile	24,680	754	1,756	27,190	23,510
Colombia	10,372	150	337	10,859	10,943
Other International					
Europe	25,216	6,586	11,228	43,030	41,525
Caribbean	36,505	1,554	1,299	39,358	41,168
Latin America (other)	8,194	542	299	9,035	8,908
All other	23,551	3,696	2,823	30,070	30,929
Total	<b>\$ 647,046</b>	<b>\$ 128,994</b>	<b>\$ 102,373</b>	<b>\$ 878,413</b>	<b>\$ 824,915</b>

(1) Exposure at default is presented after credit risk mitigation. Exposures exclude available-for-sale equity securities and other assets.

(2) Non-retail drawn includes loans, acceptances, deposits with financial institutions and available-for-sale 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 (2016 – \$20), 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.

As at October 31, 2017 (\$ millions)	Credit Risk Exposures						Other Exposures			Total
	Drawn		Other Exposures				Market Risk Exposures		All Other <sup>(1)</sup>	
	Non-retail	Retail	Securitization	Repo-style Transactions	OTC Derivatives	Equity	Also subject to Credit Risk			
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 <sup>(2)</sup>	95,692	141,066	-	-	-	-	-	-	158	236,916
Personal and credit cards	-	100,181	2,038	-	-	-	-	-	1,112	103,331
Business & government	158,510	2,878	7,032	-	-	-	-	-	29	168,449
Allowances for credit losses <sup>(3)</sup>	(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
<b>Total</b>	<b>\$402,377</b>	<b>\$ 244,670</b>	<b>\$ 9,070</b>	<b>\$ 95,319</b>	<b>\$ 35,364</b>	<b>\$ 1,281</b>	<b>\$ 39,735</b>	<b>\$ 95,094</b>	<b>\$ 32,098</b>	<b>\$ 915,273</b>

(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) Amounts for AIRB exposures are reported gross of allowances and amounts for standardized exposures are reported net of allowances.

As at October 31, 2016 (\$ millions)	Credit Risk Exposures						Other Exposures			Total
	Drawn		Other Exposures				Market Risk Exposures		All Other <sup>(1)</sup>	
	Non-retail	Retail	Securitization	Repo-style Transactions	OTC Derivatives	Equity	Also subject to Credit Risk			
Cash and deposits with financial institutions	\$ 44,001	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,343	\$ 46,344
Precious metals	-	-	-	-	-	-	-	8,442	-	8,442
Trading assets										
Securities	-	-	-	-	-	-	-	87,287	-	87,287
Loans	11,485	-	-	-	-	-	11,485	7,936	-	19,421
Other	-	-	-	-	-	-	-	1,853	-	1,853
Financial assets designated at fair value through profit or loss	16	-	-	-	-	-	-	205	-	221
Securities purchased under resale agreements and securities borrowed	-	-	-	92,129	-	-	-	-	-	92,129
Derivative financial instruments	-	-	-	-	41,657	-	36,401	-	-	41,657
Investment securities	68,134	-	832	-	-	2,042	-	-	1,911	72,919
Loans:										
Residential mortgages <sup>(2)</sup>	104,890	117,839	-	-	-	-	-	-	159	222,888
Personal and credit cards	-	95,825	2,418	-	-	-	-	-	1,259	99,502
Business & government	152,720	2,489	7,161	-	-	-	-	-	30	162,400
Allowances for credit losses <sup>(3)</sup>	(781)	-	-	-	-	-	-	-	(3,845)	(4,626)
Customers' liability under acceptances	11,978	-	-	-	-	-	-	-	-	11,978
Property and equipment	-	-	-	-	-	-	-	-	2,520	2,520
Investment in associates	-	-	-	-	-	-	-	-	4,299	4,299
Goodwill and other intangibles assets	-	-	-	-	-	-	-	-	12,141	12,141
Other (including Deferred tax assets)	637	383	-	-	-	-	-	-	13,871	14,891
<b>Total</b>	<b>\$ 393,080</b>	<b>\$ 216,536</b>	<b>\$ 10,411</b>	<b>\$ 92,129</b>	<b>\$ 41,657</b>	<b>\$ 2,042</b>	<b>\$ 47,886</b>	<b>\$ 105,723</b>	<b>\$ 34,688</b>	<b>\$ 896,266</b>

(1) Includes the Bank's insurance subsidiaries' assets and all other assets which are not subject to credit and market risks.

(2) Includes \$100.9 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.

**(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, 2017, and October 31, 2016, 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, 2016.

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<sup>(1)</sup>

Equivalent External Rating					
S&P	Moody's	DBRS	Internal Grade	Internal Grade Code	PD Range <sup>(2)</sup>
AAA to AA+	Aaa to Aa1	AAA to AA (high)		99 – 98	0.0000% – 0.0448%
AA to A+	Aa2 to A1	AA to A (high)		95	0.0448% – 0.1304%
A to A-	A2 to A3	A to A (low)	Investment grade	90	0.0552% – 0.1402%
BBB+	Baa1	BBB (high)		87	0.0876% – 0.2187%
BBB	Baa2	BBB		85	0.1251% – 0.3176%
BBB-	Baa3	BBB (low)		83	0.1788% – 0.4610%
BB+	Ba1	BB (high)		80	0.2886% – 0.5134%
BB	Ba2	BB		77	0.4658% – 0.5716%
BB-	Ba3	BB (low)	Non-Investment grade	75	0.5716% – 0.7518%
B+	B1	B (high)		73	0.7518% – 1.4444%
B to B-	B2 to B3	B to B (low)		70	1.4444% – 2.7749%
CCC+	Caa1	–		65	2.7749% – 10.1814%
CCC	Caa2	–	Watch list	60	10.1814% – 19.4452%
CCC- to CC	Caa3 to Ca	–		40	19.4452% – 35.4088%
–	–	–		30	35.4088% – 59.5053%
Default			Default	27 – 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:

As at October 31 (\$ millions) Category of internal grades	2017					2016
	Exposure at Default <sup>(1)</sup>					
	IG Code	Drawn	Undrawn commitments	Other exposures <sup>(2)</sup>	Total	Total
Investment grade	<b>99 – 98</b>	<b>\$ 71,362</b>	<b>\$ 3,062</b>	<b>\$ 16,735</b>	<b>\$ 91,159</b>	\$ 77,441
	<b>95</b>	<b>27,426</b>	<b>7,538</b>	<b>18,654</b>	<b>53,618</b>	54,007
	<b>90</b>	<b>24,253</b>	<b>14,774</b>	<b>22,481</b>	<b>61,508</b>	56,845
	<b>87</b>	<b>21,165</b>	<b>11,989</b>	<b>11,379</b>	<b>44,533</b>	42,398
	<b>85</b>	<b>19,540</b>	<b>12,691</b>	<b>8,247</b>	<b>40,478</b>	40,271
	<b>83</b>	<b>22,478</b>	<b>11,218</b>	<b>7,904</b>	<b>41,600</b>	38,044
Non-Investment grade	<b>80</b>	<b>24,162</b>	<b>9,150</b>	<b>2,923</b>	<b>36,235</b>	36,135
	<b>77</b>	<b>16,810</b>	<b>3,893</b>	<b>2,355</b>	<b>23,058</b>	23,941
	<b>75</b>	<b>11,459</b>	<b>2,381</b>	<b>6,578</b>	<b>20,418</b>	15,941
	<b>73</b>	<b>5,347</b>	<b>913</b>	<b>1,011</b>	<b>7,271</b>	7,307
	<b>70</b>	<b>2,653</b>	<b>776</b>	<b>329</b>	<b>3,758</b>	4,692
Watch list	<b>65</b>	<b>1,945</b>	<b>161</b>	<b>61</b>	<b>2,167</b>	1,297
	<b>60</b>	<b>434</b>	<b>200</b>	<b>127</b>	<b>761</b>	1,221
	<b>40</b>	<b>1,035</b>	<b>200</b>	<b>76</b>	<b>1,311</b>	2,465
	<b>30</b>	<b>159</b>	<b>–</b>	<b>–</b>	<b>159</b>	100
Default	<b>27 – 21</b>	<b>1,175</b>	<b>396</b>	<b>181</b>	<b>1,752</b>	2,520
Total		<b>\$ 251,403</b>	<b>\$ 79,342</b>	<b>\$ 99,041</b>	<b>\$ 429,786</b>	\$ 404,625
Government guaranteed residential mortgages <sup>(3)</sup>		<b>91,737</b>	<b>–</b>	<b>–</b>	<b>91,737</b>	100,869
Total		<b>\$ 343,140</b>	<b>\$ 79,342</b>	<b>\$ 99,041</b>	<b>\$ 521,523</b>	\$ 505,494

(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 (2016 – \$20), 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**

Non-retail standardized portfolio as at October 31, 2017 comprised of drawn, undrawn and other exposures to corporate, bank and sovereign counterparties amounted to \$68 billion (October 31, 2016 – \$66 billion). Exposures to most Corporate/Commercial counterparties mainly in the Caribbean and Latin American region are to non-investment grade counterparties based on the Bank’s internal grading systems.

**(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, 2017, 49% of the Canadian banking residential mortgage portfolio is insured and the average loan-to-value ratio of the uninsured portion of the portfolio is 51%.

**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)		2017					2016	
		Exposure at default <sup>(1)</sup>						
		Real estate secured			Other retail			Total
Category of (PD) grades	PD range	Mortgages	HELOC	Qualifying revolving	Other retail	Total	Total	
Exceptionally Low	0.0000% – 0.0499%	\$ 3,600	\$ –	\$ 11,844	\$ 582	\$ 16,026	\$ 44,356	
Very Low	0.0500% – 0.1999%	35,433	29,297	8,609	7,168	80,507	59,509	
Low	0.2000% – 0.9999%	61,924	4,771	11,659	15,727	94,081	52,261	
Medium Low	1.0000% – 2.9999%	5,517	974	5,836	4,743	17,070	20,851	
Medium	3.0000% – 9.9999%	398	298	5,493	2,394	8,583	6,265	
High	10.0000% – 19.9999%	200	178	–	511	889	1,997	
Extremely High	20.0000% – 99.9999%	262	62	783	346	1,453	2,312	
Default	100%	189	57	160	201	607	677	
<b>Total</b>		<b>\$ 107,523</b>	<b>\$ 35,637</b>	<b>\$ 44,384</b>	<b>\$ 31,672</b>	<b>\$ 219,216</b>	<b>\$ 188,228</b>	

(1) After credit risk mitigation.

**Retail standardized portfolio**

The retail standardized portfolio of \$70 billion as at October 31, 2017 (2016 – \$65 billion) was comprised of residential mortgages, personal loans, credit cards and lines of credit to individuals, mainly in the Caribbean and Latin American region. Of the total retail standardized exposures, \$34 billion (2016 – \$31 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 on derivative, securities lending, and other transactions related to the capital markets. 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, 2017, the approximate market value of collateral accepted that may be sold or repledged by the Bank was \$115 billion (2016 – \$99 billion). This collateral is held primarily in connection with reverse repurchase agreements, securities lending and derivative transactions.

**Collateral pledged**

In the normal course of business, securities and other assets are pledged to secure an obligation, participate in clearing or settlement systems, or operate in a foreign jurisdiction. Note 34(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 non-financial assets acquired in exchange for loans as at October 31, 2017 was \$412 million (2016 – \$404 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/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 9(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 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. Interest rate exposures in individual currencies are also controlled by gap limits.

### Interest rate sensitivity gap

The following table summarizes carrying amounts of assets, liabilities and equity, and derivative instrument notional amounts in order to arrive at the Bank's interest rate gap based on the earlier of contractual repricing or maturity dates. To arrive at the Bank's view of its effective interest rate gap, adjustments are made to factor in expected mortgage and loan repayments based on historical patterns and reclassify the Bank's trading instruments to the immediately rate sensitive and within 3 months categories. Consumer behaviour assumptions are used to reclassify certain non-maturity assets and liabilities.

As at October 31, 2017 (\$ millions)	Immediately rate sensitive	Within 3 months	Three to 12 months	One to 5 years	Over 5 years	Non-rate sensitive	Total
Cash and deposits with financial institutions	\$ 35,652	\$ 14,901	\$ 655	\$ 415	\$ 5	\$ 8,035	\$ 59,663
Precious metals	–	–	–	–	–	5,717	5,717
Trading assets	–	16,231	8,164	15,284	12,785	46,000	98,464
Financial instruments designated at fair value through profit or loss	–	–	–	13	–	–	13
Securities purchased under resale agreements and securities borrowed	23,319	49,409	4,895	–	–	17,696	95,319
Investment securities	–	16,500	12,704	33,280	5,949	836 <sup>(1)</sup>	69,269
Loans	26,508	223,268	61,310	174,401	16,933	1,949 <sup>(2)</sup>	504,369
Other assets	–	–	–	–	–	82,459	82,459
<b>Total assets</b>	<b>\$ 85,479</b>	<b>\$ 320,309</b>	<b>\$ 87,728</b>	<b>\$ 223,393</b>	<b>\$ 35,672</b>	<b>\$ 162,692</b>	<b>\$ 915,273</b>
Deposits	\$ 104,680	\$ 306,657	\$ 70,530	\$ 100,204	\$ 11,062	\$ 32,234	\$ 625,367
Financial instruments designated at fair value through profit or loss	–	3	255	3,426	979	–	4,663
Obligations related to securities sold short	74	478	1,328	12,541	9,900	6,445	30,766
Obligations related to securities sold under repurchase agreements and securities lent	67,035	25,278	1,755	–	–	1,775	95,843
Subordinated debentures	–	113	241	3,750	1,831	–	5,935
Other liabilities	102	4,620	1,048	3,090	4,263	77,951	91,074
Equity	–	613	388	2,017	–	58,607	61,625
<b>Total liabilities and equity</b>	<b>\$ 171,891</b>	<b>\$ 337,762</b>	<b>\$ 75,545</b>	<b>\$ 125,028</b>	<b>\$ 28,035</b>	<b>\$ 177,012</b>	<b>\$ 915,273</b>
On-balance sheet gap	\$ (86,412)	\$ (17,453)	\$ 12,183	\$ 98,365	\$ 7,637	\$ (14,320)	\$ –
Off-balance sheet gap	–	(1,923)	(11,273)	4,626	9,140	(570)	–
Interest rate sensitivity gap based on contractual repricing	\$ (86,412)	\$ (19,376)	\$ 910	\$ 102,991	\$ 16,777	\$ (14,890)	\$ –
Adjustment to expected repricing	132,008	(27,135)	1,024	(58,014)	(32,925)	(14,958)	–
<b>Total interest rate sensitivity gap</b>	<b>\$ 45,596</b>	<b>\$ (46,511)</b>	<b>\$ 1,934</b>	<b>\$ 44,977</b>	<b>\$ (16,148)</b>	<b>\$ (29,848)</b>	<b>\$ –</b>

As at October 31, 2016 (\$ millions)

Total interest rate sensitivity gap	\$ 48,478	\$ (56,382)	\$ (12,954)	\$ 67,538	\$ (9,441)	\$ (37,239)	\$ –
-------------------------------------	-----------	-------------	-------------	-----------	------------	-------------	------

(1) Represents common shares, preferred shares, and equity accounted investments.

(2) Includes net impaired loans, less the collective allowance on performing loans.

### 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 income over the next twelve months and economic value of shareholders' equity of an immediate and sustained 100 and 200 basis point increase and decrease in interest rates across major currencies as defined by the Bank.

As at October 31 (\$ millions)	2017						2016	
	Net income			Economic value of equity			Net income	Economic value of equity
	Canadian dollar	Other currencies	Total	Canadian dollar	Other currencies	Total		
100 bp increase	\$(53)	\$ 117	\$ 64	\$(119)	\$(235)	\$(354)	\$(32)	\$(785)
100 bp decrease	\$ 53	\$(120)	\$(67)	\$ (85)	\$ 268	\$ 183	\$ 32	\$ 650



**(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, 2017, 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 \$58 million (October 31, 2016 – \$60 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, 2017 would increase (decrease) the unrealized foreign currency translation losses in the accumulated other comprehensive income in equity by approximately \$345 million (2016 – \$366 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 available-for-sale equity securities is shown in Note 11.

**(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 VaR, the Bank uses historical resampling. The table below shows the Bank's VaR by risk factor:

(\$ millions)	As at October 31, 2017	For the year ended October 31, 2017			As at October 31, 2016
		Average	High	Low	
Credit spread plus interest rate	\$ 10.1	\$ 10.8	\$ 15.1	\$ 8.0	\$ 10.6
Credit spread	6.9	6.3	9.1	4.1	8.0
Interest rate	8.4	8.4	12.0	5.3	8.5
Equities	3.2	2.2	4.8	1.0	2.0
Foreign exchange	2.9	2.2	5.5	0.7	2.1
Commodities	1.3	1.4	2.6	0.6	2.0
Debt specific	3.3	3.6	5.1	2.4	4.2
Diversification effect	(10.3)	(8.9)	n/a	n/a	(7.6)
All-Bank VaR	\$ 10.6	\$ 11.2	\$ 14.9	\$ 9.1	\$ 13.2
All-Bank stressed VaR	\$ 34.7	\$ 28.5	\$ 44.5	\$ 19.2	\$ 21.2

## CONSOLIDATED FINANCIAL STATEMENTS

Below are the market risk capital requirements as at October 31, 2017.

(\$ millions)

All-Bank VaR	\$ 110
All-Bank stressed VaR	300
Incremental risk charge	174
Comprehensive risk measure	–
Standardized approach	43
Total market risk capital	\$ 627 <sup>(1)</sup>

(1) Equates to \$7,839 of risk-weighted assets (2016 – \$10,571).

### (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 business 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.

## 36 Business Combinations and Divestitures

### Divestitures

#### HollisWealth

On August 4, 2017, the Bank sold HollisWealth, its independent wealth advisory business. The net assets and gain on sale were not material to the Bank.

#### Roynat Lease Finance

On April 29, 2016, the Bank, through its wholly owned subsidiary, Roynat Inc., completed the sale of the business operations and assets of Roynat Lease Finance. Assets sold comprised mainly commercial lease receivables previously classified with Business and government loans. As a result of the transaction, the Bank recorded a gain on disposal of \$116 million pre-tax (\$100 million after tax), including deal and transaction costs, in non-interest income.

### Proposed Divestiture

#### Bank of Nova Scotia Berhad, Malaysia (BNS Berhad)

On May 26, 2017, the Bank reached an agreement to sell its wholly owned subsidiary, BNS Berhad. The transaction is subject to applicable regulatory approvals. The net assets and gain on sale are not material to the Bank.

### Acquisitions

#### JPMorgan Canadian Credit Card Business

On November 16, 2015, the Bank acquired a MasterCard and private label credit card portfolio and the related Canadian credit card operations from JPMorgan Chase Bank, N.A. for cash consideration of \$1.7 billion. The acquisition was accounted for as a business combination and resulted in the recognition of approximately \$1.7 billion in assets, primarily credit card loans. The acquisition forms part of the Canadian Banking business operating segment. The Bank recorded fair value adjustments to the acquired loans, representing a credit mark of \$121 million and an interest rate mark of \$28 million, finite life intangible assets of \$38 million relating to client relationships, and goodwill of \$49 million.

#### Citibank Panama and Costa Rica Retail Banking Operations

On February 1, 2016, the Bank acquired 100% of the issued and outstanding common shares of the Citigroup Panama and Citigroup Costa Rica entities (renamed Scotiabank Transformandose in both countries) for cash consideration of US\$360 million. The acquisitions were accounted for as a business combination and resulted in the recognition of approximately \$1.9 billion in assets (mainly consumer and credit card loans) and \$1.6 billion in liabilities (mainly deposits). The acquisition forms part of the International Banking business operating segment. The Bank recorded fair value adjustments to the acquired loans, representing a credit mark of \$190 million, finite life intangible assets of \$23 million relating to client relationships, low cost deposits and insurance contracts, and goodwill of \$241 million.

## 37 Event after the Consolidated Statement of Financial Position date

On November 27, 2017 the Bank submitted a binding offer to Banco Bilbao Vizcaya Argentaria, S.A.'s (BBVA) to acquire its 68.19% ownership in BBVA Chile, which BBVA is willing to accept if the minority partner does not exercise its Right of First Refusal under the shareholders agreement between BBVA and the minority partner. BBVA owns 68.19% of BBVA Chile and the minority partner owns 31.62% of BBVA Chile. The Bank has offered to acquire BBVA's interests in BBVA Chile, and its interests in certain subsidiaries, for approximately US\$2.2 billion (approximately CAD\$2.9 billion). If the transaction is completed, the Bank's Common Equity Tier 1 capital ratio will be impacted by approximately 100 basis points.

Pursuant to the mandatory tender offer for all the shares of BBVA Chile required under Chilean law or the minority partner's tag along rights under the shareholders agreement of BBVA Chile, the minority partner has the right to sell its shares of BBVA Chile on the same basis to the Bank. The Bank's Common Equity Tier 1 capital ratio would be impacted by approximately 135 basis points, if the Bank acquires 100% of BBVA Chile.

## Shareholder Information

### Annual meeting

Shareholders are invited to attend the 186th Annual Meeting of Holders of Common Shares, to be held on April 10, 2018, 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 13, 2018.

### 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 18, Series 19, Series 20, Series 21, Series 22, Series 23, Series 30, Series 31, Series 32, Series 33, Series 34, Series 36 and Series 38 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 18, Preferred	BNS.PR.P	064149 74 3
Series 19, Preferred	BNS.PR.A	064149 73 5
Series 20, Preferred	BNS.PR.Q	064149 72 7
Series 21, Preferred	BNS.PR.B	064149 71 9
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

### Dividend Dates for 2018

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 3	April 26
July 3	July 27
October 2	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

#### SENIOR LONG-TERM DEBT/DEPOSITS

DBRS	AA
Fitch	AA -
Moody's	A1
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 DEBT<sup>(1)</sup>

DBRS	AA(low)
Fitch	A+
Moody's	Baa1
Standard & Poor's	A -

#### NON-CUMULATIVE PREFERRED SHARES<sup>(1)</sup>

DBRS	Pfd-2(high)
Moody's	Baa3(hyb)
Standard & Poor's	BBB/P-2*

(1) Excluding instruments with Non-Viability Contingent Capital Features  
\*Canadian scale

Credit ratings are one of the factors that impact the Bank's access to capital markets and borrowing costs, as well as the terms on which the Bank can conduct derivatives and hedging transactions and obtain related borrowings. The credit ratings and outlook that the rating agencies assign to the Bank are based on their own views and methodologies.

On May 10, 2017, Moody's downgraded the long-term ratings of all Canadian banks, citing concerns around expanding levels of private sector debt, which could increase the likelihood of weaker asset quality in the future. Moody's downgraded the Bank's long-term ratings by one notch to A1 from Aa3, while affirming the Bank's short-term deposit rating of P-1.

The Bank continues to have strong credit ratings and is rated AA by DBRS, A1 by Moody's, AA- by Fitch and A+ by Standard and Poor's (S&P). Fitch and S&P have a stable outlook on the Bank. Meanwhile, DBRS and Moody's continue to maintain their negative outlook for all Canadian banks citing the uncertainty around the federal government's proposed new bail-in regime for senior unsecured debt, to reflect the greater likelihood that such debt may incur losses in the unlikely event of a distress scenario.

## 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 a standardized approach to calculate operational risk capital. These capital requirements are converted to risk weighted assets equivalent by multiplying by a 12.5 factor.

**Securitization:** The process by which financial assets (typically loans) are transferred to a trust, which normally issues a series of different classes of asset-backed securities to investors to fund the purchase of loans.

**Structured Entities:** A structured entity is defined as an entity created to accomplish a narrow and well-defined objective. A structured entity may take the form of a corporation, trust, partnership or unincorporated entity. Structured entities are often created with legal arrangements that impose strict and sometimes permanent limits on the decision-making powers of their governing board, trustee or management over the operations of the entity.

**Standby Letters of Credit and Letters of Guarantee:** Written undertakings by the Bank, at the request of the customer, to provide assurance of payment to a third-party regarding the customer's obligations and liabilities to that third-party.

**Structured Credit Instruments:** A wide range of financial products which includes Collateralized Debt Obligations, Collateralized Loan

## Basel III Glossary

### Credit Risk Parameters

**Exposure at Default (EAD):** Generally represents the expected gross exposure – outstanding amount for on-balance sheet exposure and loan equivalent amount for off-balance sheet exposure at default.

**Probability of Default (PD):** Measures the likelihood that a borrower will default within a one-year time horizon, expressed as a percentage.

**Loss Given Default (LGD):** Measures the severity of loss on a facility in the event of a borrower's default, expressed as a percentage of exposure at default.

### Exposure Types

#### Non-retail

**Corporate:** Defined as a debt obligation of a corporation, partnership, or proprietorship.

**Bank:** Defined as a debt obligation of a bank or bank equivalent (including certain public sector entities (PSEs) treated as bank equivalent exposures).

**Sovereign:** Defined as a debt obligation of a sovereign, central bank, certain multi development banks and certain PSEs treated as sovereign.

**Securitization:** On-balance sheet investments in asset-backed securities, mortgage-backed securities, collateralized loan obligations and collateralized debt obligations, off-balance sheet liquidity lines to the Bank's own sponsored and third-party conduits and credit enhancements.

#### Retail

**Residential Mortgage:** Loans to individuals against residential property (four units or less).

**Secured Lines Of Credit:** Revolving personal lines of credit secured by residential real estate.

**Qualifying Revolving Retail Exposures:** Credit cards and unsecured lines of credit for individuals.

**Other Retail:** All other personal loans.

### Exposure Sub-types

**Drawn:** Outstanding amounts for loans, leases, acceptances, deposits with banks and available-for-sale debt securities.

**Undrawn:** Unutilized portion of authorized committed credit lines.

Obligations, Structured Investment Vehicles, and Asset-Backed Securities. These instruments represent investments in pools of credit-related assets, whose values are primarily dependent on the performance of the underlying pools.

**Swaps:** Interest rate swaps are agreements to exchange streams of interest payments, typically one at a floating rate, the other at a fixed rate, over a specified period of time, based on notional principal amounts. Cross-currency swaps are agreements to exchange payments in different currencies over predetermined periods of time.

**Taxable Equivalent Basis (TEB):** The Bank analyzes net interest income, non-interest income, and total revenue on a taxable equivalent basis (TEB). This methodology grosses up tax-exempt income earned on certain securities reported in either net interest income or non-interest income to an equivalent before tax basis. A corresponding increase is made to the provision for income taxes; hence, there is no impact on net income. Management believes that this basis for measurement provides a uniform comparability of net interest income and non-interest income arising from both taxable and non-taxable sources and facilitates a consistent basis of measurement. While other banks also use TEB, their methodology may not be comparable to the Bank's methodology. For purposes of segmented reporting, a segment's revenue and provision for income taxes are grossed up by the taxable equivalent amount. The elimination of the TEB gross up is recorded in the Other segment.

**Value At Risk (VaR):** An estimate of the potential loss that might result from holding a position for a specified period of time, with a given level of statistical confidence.

**Yield Curve:** A graph showing the term structure of interest rates, plotting the yields of similar quality bonds by term to maturity.

### Other Exposures

**Repo-Style Transactions:** Reverse repurchase agreements (reverse repos) and repurchase agreements (repos), securities lending and borrowing.

**OTC Derivatives:** Over-the-counter derivatives contracts refers to financial instruments which are traded through a dealer network rather than through an exchange.

**Other Off-balance Sheet:** Direct credit substitutes, such as standby letters of credit and guarantees, trade letters of credit, and performance letters of credit and guarantees.

**Exchange-Traded Derivative Contracts:** Exchange-traded derivative contracts are derivative contracts (e.g., futures contracts and options) that are transacted on an organized futures exchange. These include futures contracts (both long and short positions), purchased options and written options.

**Qualifying Central Counterparty (QCCP):** A licensed central counterparty is considered "qualifying" when it is compliant with the International Organization of Securities Commissions (IOSCO) standards and is able to assist clearing member banks in properly capitalizing for CCP exposures.

**Asset Value Correlation Multiplier (AVC):** Basel III has increased the risk-weights on exposures to certain Financial Institutions (FIs) relative to the non-financial corporate sector by introducing an AVC. The correlation factor in the risk-weight formula is multiplied by this AVC factor of 1.25 for all exposures to regulated FIs whose total assets are greater than or equal to US \$100 billion and all exposures to unregulated FIs.

**Specific Wrong-Way Risk (WWR):** Specific Wrong-Way Risk arises when the exposure to a particular counterparty is positively correlated with the probability of default of the counterparty due to the nature of the transactions with the counterparty.

**Basel I Regulatory Capital Floor:** Since the introduction of Basel II in 2008, OSFI has prescribed a minimum capital floor requirement for institutions that use the AIRB approach for credit risk. The regulatory capital floor add-on is determined by comparing a capital requirement calculated by reference to Basel I against the Basel III calculation, as prescribed by OSFI. A shortfall in the Basel III capital requirement as compared with the Basel I capital floor requirement is added to RWAs.

## Additional information

### CORPORATE HEADQUARTERS

#### Scotiabank

Scotia Plaza  
44 King Street West, Toronto, Ontario  
Canada M5H 1H1  
Tel: (416) 866-6161  
E-mail: [email@scotiabank.com](mailto:email@scotiabank.com)

### FOR FURTHER INFORMATION

#### Customer Service Centre

1-800-4-SCOTIA

#### Finance Department

Scotiabank  
44 King Street West, Toronto, Ontario  
Canada M5H 1H1  
Tel: (416) 866-4790  
Fax: (647) 777-1184  
E-mail: [corporate.secretary@scotiabank.com](mailto:corporate.secretary@scotiabank.com)

#### Financial Analysts, Portfolio Managers and other Institutional Investors

Tel: (416) 775-0798  
Fax: (416) 866-7867  
E-mail: [investor.relations@scotiabank.com](mailto:investor.relations@scotiabank.com)

#### Online

For product, corporate, financial and shareholder information: [scotiabank.com](http://scotiabank.com)

#### Public and Corporate Affairs

Scotiabank  
44 King Street West, Toronto, Ontario  
Canada M5H 1H1  
Tel: (416) 866-6161  
Fax: (416) 866-4988  
E-mail: [corporate.communications@scotiabank.com](mailto:corporate.communications@scotiabank.com)

#### Shareholder Services

##### Transfer Agent and Registrar Main Agent

Computershare Trust Company of Canada  
100 University Avenue, 8th Floor, Toronto, Ontario  
Canada M5J 2Y1  
Tel: 1-877-982-8767  
Fax: 1-888-453-0330  
E-mail: [service@computershare.com](mailto:service@computershare.com)

##### Co-transfer Agent (U.S.A.)

Computershare Trust Company N.A.  
250 Royall Street, Canton, MA 02021, U.S.A.  
Tel: 1-800-962-4284

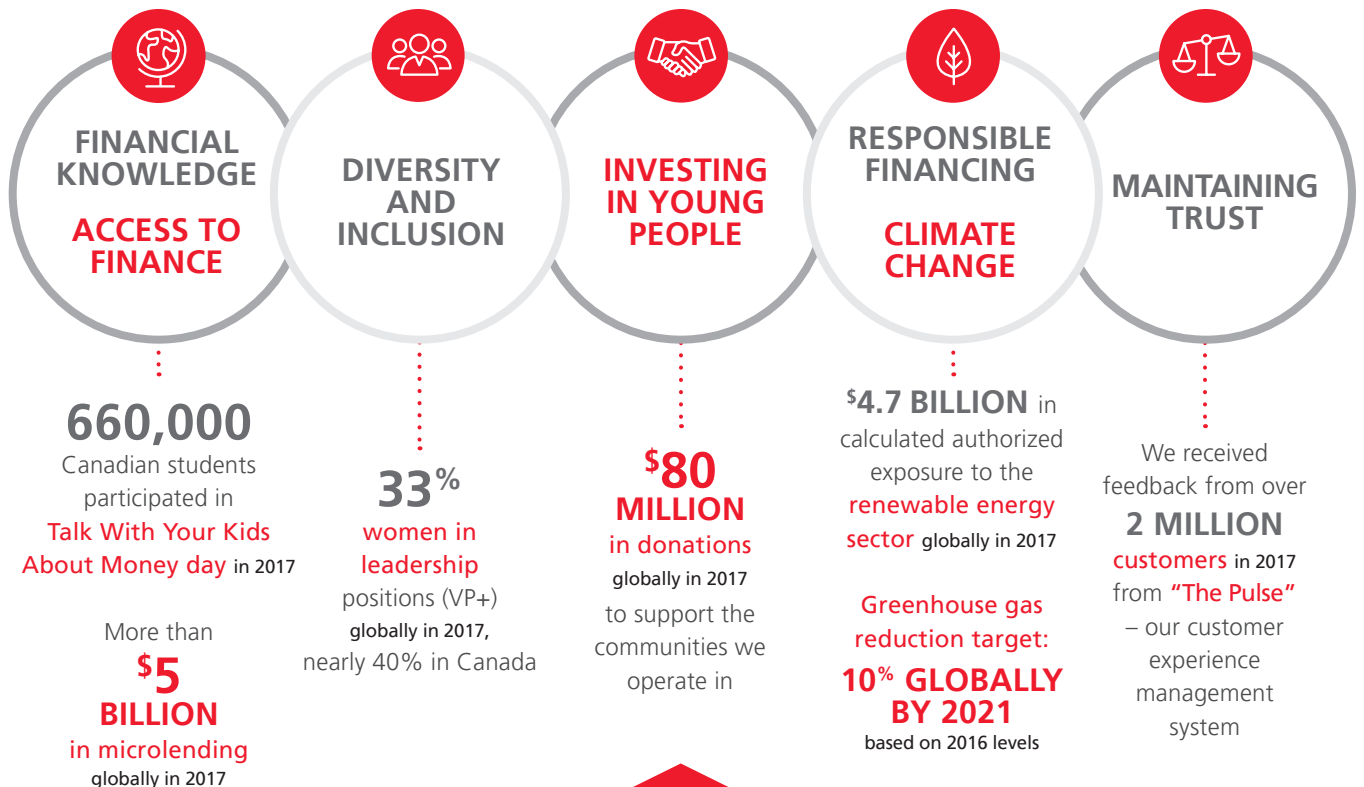


# BETTER FUTURE BETTER OFF

## CORPORATE SOCIAL RESPONSIBILITY AT SCOTIABANK

### OUR BELIEF

We believe every customer has the right to become better off. Through our CSR commitments we aim to create value for both society and Scotiabank, building a better future.



### OUR PRIORITIES

### OUR ABILITY

#### WE HAVE FINANCIAL EXPERTISE

**88,000+**  
EMPLOYEES  
in nearly  
**50 COUNTRIES**

#### WE HAVE THE REACH

**24**  
MILLION  
CUSTOMERS  
around the globe

#### WE HAVE THE RESOURCES

**\$915**  
BILLION  
IN ASSETS

Scotiabank is Canada's international bank and a leading financial services provider in North America, Latin America, the Caribbean and Central America, and Asia-Pacific. We are dedicated to helping our 24 million customers become better off through a broad range of advice, products and services, including personal and commercial banking, wealth management and private banking, corporate and investment banking, and capital markets.

[SCOTIABANK.COM](https://www.scotiabank.com)



® Registered trademark of The Bank of Nova Scotia.  
™ Trademark of The Bank of Nova Scotia.  
9464914