# UNITED STATES
# SECURITIES AND EXCHANGE COMMISSION
**Washington, D.C. 20549**

# FORM 40-F

[Check one]

¨ REGISTRATION STATEMENT PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

OR

x ANNUAL REPORT PURSUANT TO SECTION 13(a) OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended October 31, 2015 Commission File Number 001-13928

# ROYAL BANK OF CANADA

(Exact name of Registrant as specified in its charter)

| Canada | 6029 | Not Applicable |
|---|---|---|
| (Province or other jurisdiction of incorporation or organization) | (Primary Standard Industrial Classification Code Number (if applicable)) | (I.R.S. Employer Identification Number (if applicable)) |

200 Bay Street
Royal Bank Plaza
Toronto, Ontario
Canada M5J 2J5
Attention: Karen E. McCarthy
Vice-President, Associate General Counsel & Secretary
(416) 974-2256
(Address and telephone number of Registrant's principal executive offices)

Royal Bank of Canada
30 Hudson Street
27th Floor
Jersey City, New Jersey, 07302-4699
Attention: Kevin Genirs
(212) 858-7111
(Name, address (including zip code) and telephone number (including area code) of agent for service in the United States)

copies of all correspondence should be sent to:

Paul Guthrie
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Canada M5J 2J5
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Donald R. Crawshaw
Sullivan & Cromwell LLP
125 Broad Street
New York, New York
10004-2498
Tel: (212) 558-4000

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

| Title of each class | Name of each exchange on which registered |
|---|---|
| Common Shares | New York Stock Exchange |

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

Not Applicable
(Title of Class)

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

Not Applicable
(Title of Class)

For annual reports, indicate by check mark the information filed with this Form:

x Annual information form x Audited annual financial statements

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report.

| | | | |
|---|---|---|---|
| Common Shares | 1,443,423,151 | First Preferred Shares | |
| | | Series W | 12,000,000 |
| | | Series AA | 12,000,000 |
| | | Series AB | 12,000,000 |
| | | Series AC | 8,000,000 |
| | | Series AD | 10,000,000 |
| | | Series AE | 10,000,000 |
| | | Series AF | 8,000,000 |
| | | Series AG | 10,000,000 |
| | | Series AJ | 13,578,815 |
| | | Series AK | 2,421,185 |
| | | Series AL | 12,000,000 |
| | | Series AZ | 20,000,000 |
| | | Series BB | 20,000,000 |
| | | Series BD | 24,000,000 |
| | | Series BF | 12,000,000 |
| | | Series BH | 6,000,000 |
| | | Series BI | 6,000,000 |
| | | Series BJ | 6,000,000 |

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Exchange Act during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days.

Yes x No ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit and post such files).

Yes ¨ No ¨

Not applicable

## CONTROLS AND PROCEDURES

Information about disclosure controls and procedures and internal control over financial reporting can be found under “Controls and procedures” on page 106 of our Management’s Discussion and Analysis set forth in Exhibit 2, and under “Management’s Report on Internal Control over Financial Reporting” which can be found on page 118 of our Financial Review set forth in Exhibit 2, which sections are incorporated by reference.

## AUDIT COMMITTEE FINANCIAL EXPERTS

The Registrant’s board of directors has determined that it has six audit committee financial experts serving on its audit committee. Jacynthe Côté, David F. Denison, Alice D. Laberge, J. Pedro Reinhard, Thomas A. Renyi and Thierry Vandal have been determined to be such audit committee financial experts and are independent, as that term is defined by the New York Stock Exchange’s listing standards applicable to the Registrant. The U.S. Securities and Exchange Commission (the “SEC”) has indicated that the designation of Jacynthe Côté, David F. Denison, Alice D. Laberge, J. Pedro Reinhard, Thomas A. Renyi and Thierry Vandal as audit committee financial experts does not make any of them an “expert” for any purpose, impose any duties, obligations or liability on Jacynthe Côté, David F. Denison, Alice D. Laberge, J. Pedro Reinhard, Thomas A. Renyi and Thierry Vandal that are greater than those imposed on members of the audit committee and board of directors who do not carry this designation or affect the duties, obligations or liability of any other member of the audit committee.

## CODE OF ETHICS

The Registrant has adopted a code of ethics (the “Code of Conduct”) that applies to all employees, contract workers and members of the board of directors, including its principal executive officer, principal financial officer and principal accounting officer. The full text of the Code of Conduct is set forth in Exhibit 4 and is also available on our website at rbc.com.

## PRINCIPAL ACCOUNTANT FEES AND SERVICES

Information about principal accountant fees and services and a brief description of our pre-approval policies and procedures can be found under “Audit Committee” beginning on page 22 of our Annual Information Form set forth in Exhibit 1, which section is incorporated by reference. A copy of our pre-approval policies and procedures can be found in Appendix D of our Annual Information Form, which section is incorporated by reference.

## OFF-BALANCE SHEET ARRANGEMENTS

Information about off-balance sheet arrangements can be found under “Off-balance sheet arrangements” beginning on page 45 of our Management’s Discussion and Analysis set forth in Exhibit 2, which section is incorporated by reference.

## TABULAR DISCLOSURE OF CONTRACTUAL OBLIGATIONS

Tabular disclosure of contractual obligations can be found under “Risk management – Liquidity and funding risk” beginning on page 72 of our Management’s Discussion and Analysis set forth in Exhibit 2, which section is incorporated by reference.

## IDENTIFICATION OF THE AUDIT COMMITTEE

The Registrant has a separately-designated standing audit committee. Information about the audit committee can be found under “Audit Committee” beginning on page 22 of our Annual Information Form set forth in Exhibit 1, which section is incorporated by reference.

## UNDERTAKING

The Registrant undertakes to make available, in person or by telephone, representatives to respond to inquiries made by the Commission staff, and to furnish promptly, when requested to do so by the Commission staff, information relating to: the securities in relation to which the obligation to file an annual report on Form 40-F arises; or transactions in said securities.

## SUMMARY OF SIGNIFICANT DIFFERENCES FROM NYSE CORPORATE GOVERNANCE RULES

A summary of significant ways corporate governance practices followed by the Registrant differ from corporate governance practices required to be followed by U.S. Domestic Companies under the New York Stock Exchange’s listing standards (disclosure required by section 303A.11 of the NYSE Listed Company Manual) is available on the Registrant’s corporate governance website at rbc.com/governance.

## DISCLOSURE PURSUANT TO SECTION 13(r) OF THE SECURITIES EXCHANGE ACT OF 1934

In accordance with section 13(r) of the U.S. Securities Exchange Act of 1934, we are required to disclose certain Iran-related activities. We maintain a robust economic sanctions compliance program which monitors compliance with economic sanctions requirements in the jurisdictions in which we operate and we believe we have been in compliance with relevant economic sanctions legislation throughout fiscal 2015.

We currently maintain certain non-U.S. dollar denominated accounts for the Embassy of the Islamic Republic of Iran in Canada (the “Iranian Embassy”). Any funds in these accounts are frozen by Ontario court order in connection with civil litigation, which is being monitored.

In fiscal 2015, these accounts generated less than $3,000 in gross revenue and less than $2,000 in net income.

SIGNATURES

Pursuant to the requirements of the Exchange Act, the Registrant certifies that it meets all of the requirements for filing on Form 40-F and has duly caused this annual report to be signed on its behalf by the undersigned, thereto duly authorized.

ROYAL BANK OF CANADA

By: /s/ David I. McKay
Name: David I. McKay
Title: President and Chief Executive Officer

Date: December 2, 2015

## EXHIBITS

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# ROYAL BANK OF CANADA

# ANNUAL INFORMATION FORM

**December 1, 2015**

## CAUTION REGARDING FORWARD-LOOKING STATEMENTS

From time to time, we make written or oral forward-looking statements within the meaning of certain securities laws, including the "safe harbour" provisions of the *United States Private Securities Litigation Reform Act of 1995* and any applicable Canadian securities legislation. We may make forward-looking statements in this Annual Information Form and in the documents incorporated by reference herein, in other filings with Canadian regulators or the United States (U.S.) Securities and Exchange Commission (SEC), in reports to shareholders and in other communications. Forward-looking statements in this document and in the documents incorporated by reference herein include, but are not limited to, statements relating to our financial performance objectives, vision and strategic goals, the economic and market review and outlook for Canadian, U.S., European and global economies, the regulatory environment in which we operate, the outlook and priorities for each of our business segments, and the risk environment including our liquidity and funding risk as set out in the 2015 Management's Discussion and Analysis. The forward-looking information contained in this Annual Information Form and in the documents incorporated by reference is presented for the purpose of assisting the holders of our securities and financial analysts in understanding our financial position and results of operations as at and for the periods ended on the dates presented, our financial performance objectives, vision and strategic goals, and may not be appropriate for other purposes. Forward-looking statements are typically identified by words such as "believe", "expect", "foresee", "forecast", "anticipate", "intend", "estimate", "goal", "plan" and "project" and similar expressions of future or conditional verbs such as "will", "may", "should", "could" or "would".

By their very nature, forward-looking statements require us to make assumptions and are subject to inherent risks and uncertainties, which give rise to the possibility that our predictions, forecasts, projections, expectations or conclusions will not prove to be accurate, that our assumptions may not be correct and that our financial performance objectives, vision and strategic goals will not be achieved. We caution readers not to place undue reliance on these statements as a number of risk factors could cause our actual results to differ materially from the expectations expressed in such forward-looking statements. These factors – many of which are beyond our control and the effects of which can be difficult to predict – include: credit, market, liquidity and funding, insurance, operational, regulatory compliance, strategic, reputation, legal and regulatory environment, competitive and systemic risks and other risks discussed in the Risk management and Overview of other risks sections of our 2015 Management's Discussion and Analysis; weak oil and gas prices; the high levels of Canadian household debt; exposure to more volatile sectors; cybersecurity; anti-money laundering; the business and economic conditions in Canada, the U.S. and certain other countries in which we operate; the effects of changes in government fiscal, monetary and other policies; tax risk and transparency; and environmental risk.

We caution that the foregoing list of risk factors is not exhaustive and other factors could also adversely affect our results. When relying on our forward-looking statements to make decisions with respect to us, investors and others should carefully consider the foregoing factors and other uncertainties and potential events. Material economic assumptions underlying the forward-looking statements contained in this Annual Information Form are set out in our 2015 Management's Discussion and Analysis under the heading Overview and outlook and for each business segment under the heading Outlook and priorities. Except as required by law, we do not undertake to update any forward-looking statement, whether written or oral, that may be made from time to time by us or on our behalf.

Additional information about these and other factors can be found in the Risk management and Overview of other risks sections of our 2015 Management's Discussion and Analysis.

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*Notes 19, 21 and 27 to the 2015 Annual Consolidated Financial Statements for Royal Bank of Canada are incorporated by reference herein.

INFORMATION IS AT OCTOBER 31, 2015, UNLESS OTHERWISE NOTED.

## CORPORATE STRUCTURE

**Name, Address and Incorporation**[1]

Royal Bank of Canada is a Schedule I bank under the *Bank Act* (Canada), which constitutes its charter. The Bank was created as Merchants Bank in 1864 and was incorporated under the "Act to Incorporate the Merchants' Bank of Halifax" assented to June 22, 1869. The Bank changed its name to The Royal Bank of Canada in 1901 and to Royal Bank of Canada in 1990.

The Bank's corporate headquarters are located at Royal Bank Plaza, 200 Bay Street, Toronto, Ontario, Canada and its head office is located at 1 Place Ville-Marie, Montreal, Quebec, Canada.

**Intercorporate Relationships**

Information about intercorporate relationships with principal subsidiaries, including place of incorporation and percentage of securities owned by the Bank, is provided in Appendix A.

## GENERAL DEVELOPMENT OF THE BUSINESS

**Three Year History**

Through our business strategies and actions we pursue our vision, "To be among the world's most trusted and successful financial institutions." Our three strategic goals are:

- In Canada, to be the undisputed leader in financial services;
- In the U.S., to be the preferred partner to corporate, institutional and high net worth clients and their businesses; and
- In select global financial centres, to be a leading financial services partner valued for our expertise.

The Canadian economy grew in 2013 driven by consumer spending and business investment, moderated by weak net exports. Capital markets in Canada and the U.S. also saw improvements. For RBC, 2013 was a year of strong performance. In February 2013, we completed the acquisition of the Canadian auto finance and deposit business of Ally Financial Inc. (Ally Canada). The acquisition allowed us to add scale to our existing consumer and commercial auto financing businesses.

The Canadian economy grew during 2014 driven by solid consumer spending and strength in the labour market on employment gains. Equity markets in Canada and the U.S. and major European economies generally exhibited capital appreciation through most of fiscal 2014, before concerns related to geopolitical uncertainty, the Ebola outbreak in Africa, and expectations for recessionary conditions in Europe led to some volatility towards the end of our fiscal year.

Underpinned by the strength and diversity of our business, RBC delivered record performance in 2014.

[1] When we say "we", "us", "our", or "RBC", we mean Royal Bank of Canada and its subsidiaries, as applicable. References to "the Bank" mean Royal Bank of Canada without its subsidiaries.

As part of the planned transition announced in 2013, David McKay assumed the role of President and Chief Executive Officer in 2014, following the retirement of Gord Nixon, Jennifer Tory was appointed Group Head, Personal & Commercial Banking and Mark Hughes was appointed Chief Risk Officer, following the retirement of Morten Friis. In addition, in 2014, Bruce Ross joined RBC to become Group Head, Technology and Operations. Finally, following David O'Brien's retirement, Kathleen Taylor became the Chair of the Board of Directors of RBC on January 1, 2014.

The Canadian economy showed moderate growth during 2015. The first half of 2015 was impacted by weak investment by the energy sector and slow export activity. Energy production started to recover in the second half of calendar 2015 while an increase in manufacturing output combined with stronger U.S. economic growth and a weak Canadian dollar drove exports higher. Equity markets in Canada and the U.S. remained volatile throughout our fiscal year largely related to the effect of low global oil prices, diverging monetary policies amongst global central banks and a sustained decline in Chinese equity markets.

RBC delivered solid operating results across most of our business segments and strong credit quality in 2015. In addition, on November 2, 2015, RBC completed the acquisition of City National Corporation (City National), the holding company for City National Bank. City National Bank provides banking, investment and trust services throughout the U.S. and comprises substantially all of the business of City National. City National's business will give us an expansion platform for long-term growth in the U.S. By acquiring 100% of the voting equity interests, the acquisition provides us with the opportunity to enhance and complement our existing U.S. businesses in line with our strategic goals.

We continue to monitor and prepare for regulatory developments in a manner that seeks to ensure compliance with new requirements while mitigating any adverse business or economic impacts. Such impacts could result from new or amended regulations and the expectations of those who may enforce them. Significant developments include continuing changes to global and domestic standards for capital and liquidity, over-the-counter (OTC) derivatives reform, initiatives to enhance requirements for institutions deemed systemically important to the financial sector, and changes to resolution regimes addressing government bail-in and total loss-absorbing capacity. We also continue to implement reforms enacted under the U.S. *Dodd-Frank Wall Street Reform and Consumer Protection Act* (Dodd-Frank) including those related to the Volcker Rule and the Federal Reserve's enhanced prudential standards for Bank Holding Companies and Foreign Banking Organizations.

Our acquisitions and dispositions that have influenced the general development of our business over the past three years are summarized in the following table:

| BUSINESS SEGMENT | ACQUISITION/DISPOSITION | KEY CHARACTERISTICS |
|---|---|---|
| **Personal & Commercial Banking** | RBC Royal Bank (Suriname) N.V. (2015)<br>RBC Royal Bank (Jamaica) Limited and RBTT Securities Jamaica Limited (2014) | • Disposition of these businesses was in support of the repositioning of our Caribbean business. |
| | The Canadian automotive finance and deposit business of Ally Financial Inc. (2013) | • Acquisition positions RBC as a leader in the Canadian automotive financing business presence. |
| **Wealth Management** | City National Corporation (2015) (closed November 2, 2015) | • Acquisition enhances our U.S. presence and provides a strategic fit with our U.S. Wealth Management and Capital Markets businesses creating a platform for long term growth. |
| | Royal Bank of Canada (Suisse) SA (2015) | • Disposition supports our long-term growth strategy to build a focused global wealth management business servicing clients from our hubs in North America, the British Isles and Asia. |

Additional information about our three year history can also be found under the "Overview and outlook" section beginning on page 10 of our 2015 Management's Discussion and Analysis, which section is incorporated by reference herein.

## DESCRIPTION OF THE BUSINESS

**General Summary**

We are Canada's largest bank, and one of the largest banks in the world, based on market capitalization. We are one of North America's leading diversified financial services companies, and provide personal and commercial banking, wealth management services, insurance, investor services and capital markets products and services on a global basis. We employ approximately 78,000 full- and part-time employees who serve more than 16 million personal, business, public sector and institutional clients through offices in Canada, the U.S. and 37 other countries.

Our reporting segments are Personal & Commercial Banking, Wealth Management, Insurance, Investor & Treasury Services, Capital Markets and Corporate Support. Additional information about our business and each segment (including segment results) can be found under "Overview and outlook" beginning on page 10 and under "Business segment results" beginning on page 19 of our 2015 Management's Discussion and Analysis, which sections are incorporated by reference herein.

**Seasonality**

Information about seasonality is provided under "Quarterly financial information" beginning on page 41 of our 2015 Management's Discussion and Analysis, which section is incorporated by reference herein.

**Competition**

Our competition includes the other Canadian Schedule I banks, and, as we expand into new lines of business, our competition has grown to include other Canadian banks, trust companies, foreign banks, auto financing companies, credit unions, caisses populaires and companies that offer products and services traditionally offered by financial institutions, investment counselling firms, brokerages, investment dealers, self-directed brokers, mutual fund companies, global private banks, wealth managers, asset managers, custody service providers, insurance companies, virtual banks and specialty financial service providers. Key competitive factors include the range and features of financial products and services offered, pricing, distribution, and service quality. Additional information about our competition can be found under "Business segment results" beginning on page 19 of our 2015 Management's Discussion and Analysis, which section is incorporated by reference herein.

**Government Regulation and Supervision – Canada**

The Bank is a "Schedule I" bank under the *Bank Act* (Canada) (Bank Act), and, as such, is a federally regulated financial institution. Its Canadian trust, loan and insurance subsidiaries are also federally regulated financial institutions governed by (respectively) the *Trust and Loan Companies Act* (Canada) and the *Insurance Companies Act* (Canada). The activities of the Bank's Canadian trust, loan and insurance subsidiaries are also regulated under provincial and territorial laws in respect of their activities in the provinces and territories. In certain provinces, some of the Bank's capital markets activities are regulated under provincial securities laws (which are administered and enforced by securities regulatory authorities).

The Office of the Superintendent of Financial Institutions (OSFI), an independent agency of the Government of Canada, reports to the Minister of Finance (the Minister) for the supervision of the Bank, as well as its Canadian federally regulated trust, loan and insurance subsidiaries. OSFI is required, at least once a year, to examine the affairs and business of each institution for the purpose of determining whether statutory

requirements are duly observed and the institution is in sound financial condition, and report to the Minister. The Bank is also required to make periodic filings and reports to OSFI.

The Bank and its Canadian trust, loan and insurance subsidiaries are also subject to regulation under the *Financial Consumer Agency of Canada Act* (FCAC Act).[2] The Financial Consumer Agency of Canada (Agency), among other things, enforces consumer-related provisions of the federal statutes which govern these financial institutions. The Commissioner of the Agency must report to the Minister on all matters connected with the administration of the FCAC Act and consumer provisions of other federal statutes, including the Bank Act, *Trust and Loan Companies Act* and *Insurance Companies Act*. The Bank and its Canadian trust and loan subsidiaries are also subject to provincial and territorial laws of general application.

The Bank and its subsidiaries, Royal Trust Corporation of Canada, The Royal Trust Company, Royal Bank Mortgage Corporation and RBC Investor Services Trust are member institutions of the Canada Deposit Insurance Corporation (CDIC). CDIC insures certain deposits held at the member institutions.

Under the Bank Act, the Bank is prohibited from engaging in or carrying on any business other than the business of banking, except as permitted. The Bank can provide, amongst other services, any financial services, investment counselling services and portfolio management services, act as a financial agent and issue and operate payment, credit or charge card plans.

The Bank has broad powers to invest in securities, but is limited in making “substantial investments” or in controlling certain types of entities. A “substantial investment” will arise through direct or indirect beneficial ownership of voting shares carrying more than 10 per cent of the voting rights attached to all outstanding voting shares of a corporation, shares representing more than 25 per cent of the shareholders’ equity in a corporation, or interests representing more than 25 per cent of the ownership interests in any unincorporated entity.

The Bank can, however, make controlling, and in certain circumstances, non-controlling substantial investments in Canadian banks, trust or loan companies, insurance companies, cooperative credit societies and entities primarily engaged in dealing in securities; in foreign regulated entities which are primarily engaged outside Canada in a business that if carried on in Canada would be the business of banking, the business of a cooperative credit society, the business of insurance, the business of providing fiduciary services or the business of dealing in securities; and in factoring, finance, financial leasing, specialized financing and financial holding entities. Certain substantial investments may be made only with the prior approval of the Minister or the Superintendent of Financial Institutions (the Superintendent).

The Bank and its Canadian trust, loan and insurance subsidiaries are also required to maintain, in relation to operations, adequate capital and liquidity and OSFI may direct financial institutions to increase capital and/or to provide additional liquidity.

The *Proceeds of Crime (Money Laundering) and Terrorist Financing Act* (the Act) is applicable to all of our businesses in Canada. The Act implements specific measures designed to detect and deter money laundering and the financing of terrorist activities. Further, the Act sets out obligations related to deterring and detecting money laundering and terrorist financing from a global perspective, in order to minimize the possibility that RBC could become a party to these activities. RBC has enterprise-wide anti-money laundering policies and procedures which assist in reducing the risk of facilitating money laundering and terrorist financing activities.

[2] For the Bank’s trust subsidiaries, only their retail deposit taking activities are subject to regulation under the FCAC Act.

**Broker-Dealer/Investment Management Subsidiaries**

The activities of certain of the Bank's subsidiaries, such as RBC Dominion Securities Inc. (RBC DS), RBC Direct Investing Inc. (RBC DI), Royal Mutual Funds Inc. (RMFI), RBC Global Asset Management Inc., Phillips, Hager & North Investment Funds Ltd. (PH&N IF), and RBC Phillips, Hager & North Investment Counsel Inc., which act as securities dealers (including investment dealers, mutual fund dealers and exempt market dealers), advisors (investment counsel/portfolio manager) or investment fund managers are regulated in Canada under provincial and territorial securities laws (which are administered and enforced by securities regulatory authorities) and, in some cases, by the rules of the applicable self-regulatory organization (the Investment Industry Regulatory Organization of Canada for investment dealers and the Mutual Fund Dealers Association of Canada for mutual fund dealers). Each of RBC DS and RBC DI are members of the Canadian Investor Protection Fund. Customers' accounts are protected by the Canadian Investor Protection Fund within specified limits. A brochure describing the nature and limits of coverage is available to customers upon request. RMFI and PH&N IF are each members of the MFDA Investor Protection Fund, which protects against certain losses of customer property held by an insolvent MFDA member; similarly, a brochure describing the nature and limits of coverage is also available to customers upon request.

**Insurance**

The activities of the Bank's regulated Canadian insurance subsidiaries, RBC Life Insurance Company (RBC Life), RBC General Insurance Company (RBC General) and RBC Insurance Company of Canada (RICC), are federally governed by the *Insurance Companies Act* and by provincial legislation in each province and territory in which they carry on business. In addition, the Bank is federally governed by the Bank Act for any insurance activities it is permitted to carry out. The Bank may administer, promote and provide advice in relation to certain authorized types of insurance and may conduct any aspect of the business of insurance, other than the underwriting of insurance, outside of Canada and in respect of risks outside Canada. However, in Canada, the Bank may not act as agent for any person in the placing of insurance. The Bank can promote an insurance company, agent or broker or non-authorized types of insurance (e.g. life and home and automobile insurance) to certain prescribed groups where the promotion takes place outside of physical bank branches. Additionally, and subject to applicable restrictions under the Bank Act, RBC Wealth Management Finance Services Inc., a wholly owned indirect subsidiary of the Bank, is licensed under applicable provincial and territorial laws to sell insurance products, including life and benefits insurance along with money products such as annuities and segregated funds, on both an individual and group basis, for both related and independent insurance companies in Canada.

RBC Life, RBC General and RICC are also subject to regulation under the FCAC Act. The Agency, among other things, enforces consumer-related provisions of the federal statutes which govern financial institutions.

RBC Life is a member of Assuris which is a not-for-profit organization that protects Canadian life insurance policyholders against loss of benefits due to the financial failure of a member company. RICC and RBC General are members of the Property and Casualty Insurance Compensation Corporation which is the corporation protecting Canadian property and casualty policyholders against loss of benefits due to the financial failure of a member company.

**Government Regulation and Supervision – United States**

**Banking**

In the U.S., the Bank is characterized as a foreign banking organization (FBO). Generally, the operations of an FBO and its U.S. subsidiaries and offices are subject to the same comprehensive regulatory regime that governs the operations of U.S. domestic banking organizations. The Bank's U.S. businesses are subject to supervision and oversight by various U.S. authorities, including federal and state regulators, as well as self-regulatory organizations.

In 2000, the Bank became a U.S. “financial holding company” (FHC), as authorized by the Board of Governors of the Federal Reserve System (Federal Reserve). On November 2, 2015, RBC USA Holdco, Inc. (USA Holdco), RBC’s top tier U.S. holding company, became a bank holding company (BHC) and an FHC. Pursuant to the *Gramm-Leach-Bliley Act*, an FHC may engage in, or acquire companies engaged in, a broader range of financial and related activities than are permitted to banking organizations that do not maintain FHC status. To qualify as an FHC, an FBO, or BHC, as the case may be, the Bank and USA Holdco must meet certain capital requirements and must be deemed to be “well managed” for U.S. bank regulatory purposes. In addition, any U.S. depository institution subsidiaries of the FBO or BHC must also meet certain capital requirements and be deemed to be “well managed” and must have at least a “satisfactory” rating under the *Community Reinvestment Act of 1977*.

An FBO must meet several conditions in order to maintain “well managed” status for U.S. bank regulatory purposes: (i) the FBO must have received a composite regulatory rating of “satisfactory” or better for its U.S. branch, agency and commercial lending company operations following its last regulatory examination, (ii) the FBO’s home country supervisor must consent to it expanding its activities in the U.S. to include activities permissible for an FHC, (iii) the FBO’s management must meet standards comparable to those required for a U.S. bank subsidiary of an FHC, and (iv) each U.S. depository institution subsidiary of the FBO and/or BHC must be deemed to be “well managed”, which requires both a “satisfactory” composite regulatory rating and a “satisfactory” rating on the “management” component of their last regulatory examination.

Under the *International Banking Act of 1978* (IBA) and the *Bank Holding Company Act of 1956* (BHCA), all of the Bank’s U.S. banking operations are subject to supervision and regulation by the Federal Reserve. Under the IBA, the BHCA, and related regulations of the Federal Reserve, the Bank generally may not open a branch, agency or representative office in the U.S., nor acquire five per cent or more of the voting stock of any U.S. bank or bank holding company, without notice to or prior approval of the Federal Reserve.

The Federal Reserve is the U.S. “umbrella regulator” responsible for regulatory oversight of the whole of the Bank’s U.S. activities. The Federal Reserve consults with and obtains information from other functional U.S. regulators that exercise supervisory authority over the Bank’s various U.S. operations. Reports of financial condition and other information relevant to the Bank’s U.S. businesses are regularly filed with the Federal Reserve.

On July 21, 2010, Dodd-Frank was enacted. The statute requires significant changes to U.S. financial regulations, with material cross-border implications. Some provisions of Dodd-Frank have taken effect automatically. Other provisions require adoption of rules by one or more U.S. regulatory authorities to become operative and are in various stages of completion.

Under Dodd-Frank, the Bank is registered as a “Swap Dealer” with the U.S. Commodity Futures Trading Commission (CFTC) and the National Futures Association (NFA).

For further information on certain developments relating to Dodd-Frank, see the “Risk management” section beginning on page 48 of our 2015 Management’s Discussion and Analysis, which section is incorporated by reference herein.

The Bank maintains three branches in New York which are licensed and supervised as federal branches by the Office of the Comptroller of the Currency (OCC), the U.S. supervisor of national banks. In general, the Bank’s branches may exercise the same rights and privileges, and are subject to the same restrictions, as would apply to a U.S. national bank at the same location(s). The Bank’s branches may accept wholesale deposits but may not take U.S. domestic retail deposits outside of an available exemption. Deposits in the Bank’s branches are not insured by the Federal Deposit Insurance Corporation (FDIC). The Bank has obtained approval to maintain a limited federal branch in Jersey City, New Jersey which may exercise the same rights and privileges as the Bank’s federal branches.

The OCC examines and supervises the Bank’s U.S. branch office activities and annually examines and assesses their operations. In addition, the Bank’s U.S. branches are required to maintain certain liquid assets

on deposit in their state(s) of residence, which deposits are pledged to the OCC. Furthermore, the Bank is subject to supervisory guidance based on the examiners' assessment of risk management, operational controls, compliance and asset quality.

The Bank also maintains a state-licensed agency in Texas and state-licensed representative offices in California, Delaware, Texas and Washington (where it is called an alien bureau). In general, the activities conducted at the Bank's agencies include a broad range of banking powers, including lending and maintaining credit balances, but agencies are limited in their ability to accept deposits from citizens or residents of the U.S. Further limitations may be placed on such agencies activities based on state laws. The activities conducted at the Bank's representative offices are limited to representational and administrative functions; such representative offices do not have authority to make credit decisions and may not solicit or contract for any deposit or deposit-like liability. The Bank's representative offices are examined and assessed by both the Federal Reserve and state regulators and are required to adhere to any applicable state regulations.

Banking activities are also conducted at City National Bank (CNB) and RBC Bank (Georgia), National Association (RBC Bank), both of which are national banking associations chartered by the OCC. CNB and RBC Bank are members of the Federal Reserve System. The primary federal regulator of CNB and RBC Bank is the OCC. As U.S. banks, CNB and RBC Bank are allowed to take retail deposits, and they offer retail and commercial banking services, including deposit and credit services, including consumer lending products such as credit card and mortgage loans, and business and commercial loans. CNB and RBC Bank are subject to capital requirements, dividend restrictions, limitations on investments and subsidiaries, limitations on transactions with affiliates (including the Bank and its branches), deposit reserve requirements and other requirements administered by the OCC and the Federal Reserve. Deposits at CNB and RBC Bank are FDIC-insured to the extent permissible. As a national bank in the U.S., CNB also has fiduciary powers and exercises investment management under those powers.

Trust company activities are conducted at RBC Trust Company (Delaware) Limited (RBC Trust), the Bank's U.S. trust company subsidiary. RBC Trust is a Delaware trust company chartered and supervised by the Delaware State Banking Commission and, as a subsidiary of a bank holding company, is subject to oversight by the Federal Reserve. RBC Trust is subject to dividend restrictions, limitations on investments and other applicable state banking law requirements.

The *USA PATRIOT Act*, which amended the *Bank Secrecy Act*, requires U.S. banks and foreign banks with U.S. operations to maintain appropriate policies, procedures and controls relating to anti-money laundering compliance, suspicious activity and currency transaction reporting and due diligence on customers to prevent, detect and report individuals and entities involved in money laundering and the financing of terrorism.

**Broker-Dealer Activities and Broker-Dealer Subsidiaries**

The principal securities brokerage, trading, advisory and investment banking activities are conducted in the following U.S.-registered broker-dealer subsidiaries:

- RBC Capital Markets, LLC (RBC CM LLC),
- RBC Capital Markets Arbitrage S.A. (RBC CMA),
- City National Securities, Inc.,
- RIM Securities LLC, and
- Symphonic Securities LLC.

The SEC, state securities regulators, the Financial Industry Regulatory Authority (FINRA) and other self-regulatory organizations regulate these broker-dealer subsidiaries. Certain activities of RBC CM LLC and RBC CMA are also subject to regulation by the CFTC and the NFA. Pursuant to Dodd-Frank, RBC CM LLC is registered as a "Swaps Firm" with the NFA. Certain activities of RBC CM LLC are subject to regulation by the Municipal Securities Rulemaking Board.

**Investment Management and Other Fiduciary Activities**

The Bank's New York branches have fiduciary powers, and certain branches conduct investment management and custody activities for certain customers. In addition, other affiliates are involved in the business of investment management. In many cases, these activities require that the affiliates be registered with the SEC as investment advisers under the *U.S. Investment Advisers Act of 1940* (Advisers Act). The Advisers Act and related rules regulate the registration and activities of investment advisers. Although the regulatory regime for investment advisers is similar to that for broker-dealers, the standard of conduct is higher due to the advisers' status as fiduciaries. This status as a fiduciary limits the investment adviser's ability to make use of affiliates and requires that it avoid or manage and disclose conflicts of interests with respect to the conduct of its business.

The following entities are the Bank's subsidiaries that are registered as "investment advisers" with the SEC:

- RBC CM LLC,
- RBC Alternative Asset Management Inc.,
- RBC Global Asset Management (U.S.) Inc. (GAMS),
- RBC Global Asset Management (UK) Limited,
- Royal Bank of Canada Investment Management (USA) Limited,
- RBC Private Counsel (USA) Inc.,
- BlueBay Asset Management LLP,
- BlueBay Asset Management USA LLC,
- City National Rochdale,
- City National Securities, Inc.,
- Clifford Swan Investment Counsel LLC,
- Convergent Wealth Advisors, LLC,
- LMCG Investments, LLC,
- Mid-Continent Capital LLC, and
- Symphonic Financial Advisors LLC

GAMS is also the adviser to several U.S. mutual funds sponsored by it. The *U.S. Investment Company Act of 1940* and related rules regulate the registration and operation of mutual funds and the activities of the funds' advisers and other affiliates, and certain of the funds' other service providers.

**ERISA and the Internal Revenue Code**

The U.S. *Employee Retirement Income Security Act of 1974* , as amended (ERISA), and the related rules regulate the activities of the financial services industry with respect to pension plan clients. Similarly, the U.S. *Internal Revenue Code* and the regulations thereunder impose requirements with respect to such clients and also individual retirement accounts (IRAs). Brokers, dealers and investment advisers to pension plans and IRAs must conduct their business in compliance with both ERISA and applicable tax regulations.

**Risk Factors**

A discussion of risks affecting us and our businesses appears under the headings "Risk management" and "Overview of other risks" beginning on pages 48 and 89, respectively, of our 2015 Management's Discussion and Analysis for the year ended October 31, 2015, which discussions are incorporated by reference herein.

**Environmental Policies**

Our first corporate environmental policy was developed in 1991 and since then we have been committed to environmental management and continuous improvement. In 2014, we published the second iteration of the RBC Environmental Blueprint that articulates our policy, priorities, objectives and targets relating to environmental sustainability through 2018. It also establishes our approach to environmental matters pertaining to operations, business activities, products and services, employees, governance, compliance, reporting transparency and partnerships.

Underpinning the RBC Environmental Blueprint is our Enterprise-wide Environmental & Social Risk Management Policy, which applies to all of our business activities globally. The purpose of the policy is to ensure that the impact of environmental and social factors is considered in all RBC activities. The Enterprise-wide Environmental & Social Risk Management Policy is complemented by a suite of risk management policies that mandate enhanced due diligence on transactions and business activities where environmental and social issues may give rise to credit, legal or reputational risk. We regularly update these policies and procedures to address regulatory changes, emerging and evolving issues, and international best practices. Environmental and social risk management policies have been established for:

- Residential mortgage lending in Canada,
- Small business and commercial loans and mortgages for Canada, the U.S. and the Caribbean,
- Agriculture lending in Canada,
- Corporate lending and investment banking globally,
- Project financing (in accordance with the Equator Principles) globally,
- Public sector lending in Canada, and
- Environmental investigations (use of third-party consultants) in Canada and the U.S.

We also have the RBC Supplier Code of Conduct and an enterprise-wide supplier management policy that includes requirements that we gather the appropriate environmental and social information regarding prospective suppliers and the products and services they offer, and incorporate that information in procurement decisions.

Additional information about our environmental policies and environmental risks can be found under “Overview of other risks – Environmental risk” on page 91 of our 2015 Management’s Discussion and Analysis, which section is incorporated by reference herein.

## DESCRIPTION OF CAPITAL STRUCTURE

**General Description**

The Bank’s authorized share capital consists of an unlimited number of common shares without nominal or par value and an unlimited number of first preferred shares and second preferred shares without nominal or par value, issuable in series, which classes may be issued for a maximum consideration of $20 billion and $5 billion, respectively. The following summary of share capital is qualified in its entirety by the Bank’s by-laws and the actual terms and conditions of such shares.

**Common Shares**

The holders of the Bank’s common shares are entitled to vote at all meetings of shareholders, except meetings at which only holders of a specified class, other than common shares, or series of shares are entitled to vote. The holders of common shares are entitled to receive dividends as and when declared by the board of directors, subject to the preference of the preferred shares. After payment to the holders of the preferred shares of the amount or amounts to which they may be entitled, and after payment of all outstanding debts,

the holders of the common shares will be entitled to receive any remaining property upon liquidation, dissolution or winding-up.

**Preferred Shares**

First preferred shares may be issued, from time to time, in one or more series with such rights, privileges, restrictions and conditions as the board of directors may determine, subject to the Bank Act and to the Bank's by-laws. Currently, Non-Cumulative First Preferred Shares Series W, AA, AB, AC, AD, AE, AF, AG, AJ, AK, AL, AZ, BB, BD, BF, BH, BI and BJ are outstanding. On November 2, 2015, in connection with the merger of City National with and into USA Holdco, the Bank issued Non-Cumulative First Preferred Shares Series C-1 and C-2 (the Series C Preferred Shares) in exchange for two series of outstanding City National preferred stock. We redeemed all of our issued and outstanding Non-Cumulative First Preferred Shares Series AX on November 24, 2014.

The Non-Cumulative First Preferred Shares Series W are, subject to the consent of the Superintendent, the requirements of the Bank Act and the approval of the Toronto Stock Exchange, redeemable or exchangeable by the Bank into common shares. The first preferred shares are entitled to preference over any second preferred shares (discussed below) and common shares and over any other shares ranking junior to the first preferred shares with respect to the payment of dividends and in the distribution of property in the event of liquidation, dissolution or winding-up.

Effective January 1, 2013, in accordance with capital adequacy requirements adopted by OSFI, non-common capital instruments issued after January 1, 2013, including first preferred shares, must include terms providing for the full and permanent conversion of such securities into common shares upon the occurrence of certain trigger events relating to financial viability (the Non-Viability Contingent Capital or NVCC requirements) in order to qualify as regulatory capital. As of January 1, 2013, all outstanding capital instruments that do not meet the NVCC requirement will be considered non-qualifying capital instruments and will be phased out beginning January 1, 2013 at the rate of 10 per cent each year for 10 years. The Non-Cumulative First Preferred Shares Series AZ, BB, BD, BF, BH, BI and BJ contain non-viability contingent capital provisions necessary for the shares to qualify as Tier 1 regulatory capital under Basel III and are therefore convertible into common shares upon the occurrence of a non-viability contingent capital trigger event.

The Series C Preferred Shares do not contain non-viability contingent capital provisions and are therefore not convertible into common shares upon the occurrence of a non-viability capital trigger event. Consequently, the Series C Preferred Shares do not qualify as regulatory capital. If the dividends declared on the Series C Preferred Shares have not been fully paid or a sum sufficient for the payment thereof has not been set aside, the Bank is not permitted to repurchase, redeem or otherwise acquire for consideration any share that, by its terms, expressly provides that it ranks *pari passu* with the Series C Preferred Shares (the Series C Parity Shares), except if the Bank offers to purchase all, or a pro rata portion of the Series C Preferred Shares and the Series C Parity Shares. Further, if the dividends declared on the Series C Preferred Shares or the Series C Parity Shares have not been fully paid, the Bank must declare any additional dividends upon such shares on a proportional basis so that the amount of dividends declared per series of shares will be equal to the ratio that the accrued dividends for the Series C Preferred Shares and the accrued dividends for the Series C Parity Shares bear to each other.

In the event the Bank fails to pay, declare, or set aside for payment, dividends on any of the Series C Preferred Shares or any other series of preferred shares of the Bank for six quarterly dividend periods, or their equivalent, whether or not consecutive, the number of directors of the board of directors shall be increased by two at the Bank's first annual meeting of shareholders held thereafter. The holders of the Series C Preferred Shares shall have the right, together with holders of the Series C Parity Shares that have similar voting rights, if any, to elect, as a class together, such additional two members to the Bank's board of directors for a term of one year. Upon the payment, or the declaration and setting aside for payment, in full, of all the cumulative dividends payable for all past dividend periods and continuous noncumulative

dividends for at least one year on all outstanding preferred shares of the Bank, the terms of such two directors shall terminate and the number of directors of the Bank's board of directors shall be reduced by two and the voting rights of the holders of the Series C Preferred Shares and the Series C Parity Shares shall cease (subject to the revesting of such voting right in the event of each and every additional failure in the payment of dividends for six quarterly dividend periods).

Second preferred shares may be issued, from time to time, in one or more series with such rights, privileges, restrictions and conditions as the board of directors may determine, subject to the Bank Act and to the Bank's by-laws. There are no second preferred shares currently outstanding. Second preferred shares would rank junior to the first preferred shares. Second preferred shares would be entitled to preference over the common shares and over any other shares ranking junior to the second preferred shares with respect to the payment of dividends and in the distribution of property in the event of our liquidation, dissolution or winding-up.

Except as outlined above with respect to the Series C Preferred Shares and the Series C Parity Shares, holders of the first and second preferred shares are not entitled to any voting rights as a class except as provided under the Bank Act or the Bank's by-laws. Under the Bank Act, the Bank may not create any other class of shares ranking equal with or superior to a particular class of preferred shares, increase the authorized number of, or amend the rights, privileges, restrictions or conditions attaching to such class of preferred shares, without the approval of the holders of that class of preferred shares.

Any approval to be given by the holders of the first and second preferred shares may be given in writing by the holders of not less than all of the outstanding preferred shares of each class or by a resolution carried by the affirmative vote of not less than 66 2/3 per cent of the votes cast at a meeting of holders of each class of preferred shares at which a quorum is represented. A quorum at any meeting of holders of each class of preferred shares is 51 per cent of the shares entitled to vote at such meeting, except that at an adjourned meeting there is no quorum requirement.

Additional information about the Bank's share capital can be found under the "Capital management" section beginning on page 91 of our 2015 Management's Discussion and Analysis, which section is incorporated by reference herein.

**Prior Sales**

For information about the Bank's issuances of subordinated debentures since October 31, 2014, see the "Capital management" section beginning on page 91 of our 2015 Management's Discussion and Analysis and "Subordinated debentures" in Note 19 on page 180 of our 2015 Annual Consolidated Financial Statements for the year ended October 31, 2015, which section and note are incorporated by reference herein.

**Constraints**

The Bank Act contains restrictions (which are subject to any orders that may be issued by the Governor in Council) on the issue, transfer, acquisition, beneficial ownership and voting of all shares of a chartered bank. The following is a summary of such restrictions.

Subject to certain exceptions contained in the Bank Act, no person may be a major shareholder of a bank having equity of $12 billion or more (which includes the Bank). A person is a major shareholder if:

(a) the aggregate of the shares of any class of voting shares of the Bank beneficially owned by that person, by entities controlled by that person and by any person associated or acting jointly or in concert with that person is more than 20 per cent of that class of voting shares, or

(b) the aggregate of shares of any class of non-voting shares of the Bank beneficially owned by that person, by entities controlled by that person and by any person associated or acting jointly or in concert with that person is more than 30 per cent of that class of non-voting shares.

Additionally, no person may have a significant interest in any class of shares of a bank (including the Bank) unless the person first receives the approval of the Minister of Finance. For purposes of the Bank Act, a person has a significant interest in a class of shares of a bank where the aggregate of any shares of the class beneficially owned by that person, by entities controlled by that person and by any person associated or acting jointly or in concert with that person exceeds 10 per cent of all of the outstanding shares of that class of shares of such bank.

In addition, the Bank Act prohibits a bank from purchasing or redeeming any of its shares or paying any dividends if there are reasonable grounds for believing the bank is, or the payment would cause the bank to be, in contravention of the Bank Act requirement to maintain, in relation to its operations, adequate capital and appropriate forms of liquidity and to comply with any regulations or directions of the Superintendent in relation thereto. Under the Bank Act, the Bank cannot redeem or purchase any shares for cancellation unless the prior consent of the Superintendent has been obtained.

Subject to any orders that may be issued by the Governor in Council, the Bank Act also prohibits the registration of a transfer or issue of any shares of a Canadian bank to any government or governmental agency of Canada or any province of Canada, or to any government of any foreign country, or any political subdivision, or agency of any foreign country.

**Ratings**

Our ability to access unsecured funding markets and to engage in certain collateralized business activities on a cost-effective basis is primarily dependent upon maintaining competitive credit ratings. Our credit ratings are largely determined by the rating agencies' assessment of the quality of our earnings, the adequacy of our capital and the effectiveness of our risk management programs. There can be no assurance that our credit ratings and rating outlooks will not be lowered or that ratings agencies will not issue adverse commentaries about us, potentially resulting in adverse consequences for our funding capacity or access to capital markets.

A lowering of our credit ratings may also affect our ability, and the cost, to enter into normal course derivative or hedging transactions and may require us to post additional collateral under certain contracts. However, we estimate, based on periodic reviews of ratings triggers embedded in our existing businesses and of our funding capacity sensitivity, that a minor downgrade would not materially influence our liability composition, funding access, collateral usage and associated costs.

As at December 1, 2015, the Bank received the following ratings from the rating agencies listed below:

| | | RATING | RANK[1] |
|---|---|---|---|
| **Moody's Investors Service** (New York) | Long-term Senior Debt* | Aa3 | 4 of 22 |
| | Short-term Debt | P-1 | 1 of 3 |
| | Subordinated Debt | A3 | 7 of 22 |
| | NVCC Subordinated Debt | Baa1 | 8 of 22 |
| | Preferred Shares | Baa2 | 9 of 22 |
| | NVCC Preferred Shares | Baa2 | 9 of 22 |
| **Standard & Poor's** (New York) | Long-term Senior Debt* | AA- | 4 of 22 |
| | Short-term Debt | A-1+ | 1 of 6 |
| | Subordinated Debt | A | 6 of 22 |
| | NVCC Subordinated Debt | A- | 7 of 20 |
| | Preferred Shares | BBB+ | 6 of 22 |
| | NVCC Preferred Shares | BBB | 5 of 20 |
| **Fitch Ratings** (New York) | Long-term Senior Debt* | AA | 3 of 23 |
| | Short-term Debt | F1+ | 1 of 8 |
| | Subordinated Debt | AA- | 4 of 23 |
| | NVCC Subordinated Debt | - | - |
| | Preferred Shares | - | - |
| | NVCC Preferred Shares | - | - |
| **DBRS** (Toronto) | Long-term Senior Debt* | AA | 3 of 26 |
| | Short-term Debt | R-1 (high) | 1 of 8 |
| | Subordinated Debt* | AA (low) | 4 of 26 |
| | NVCC Subordinated Debt | A (low) | 7 of 26 |
| | Preferred Shares* | Pfd-2 (high) | 4 of 16 |
| | NVCC Preferred Shares | Pfd-2 | 5 of 16 |

[1] Relative rank of each rating within the organization's overall classification system.
* The outlook with respect to such ratings is set out in Appendix B.

A definition of the categories of each rating as at December 1, 2015 has been obtained from the respective rating agency's website and is outlined in Appendix B, and a more detailed explanation may be obtained from the applicable rating agency.

On January 23, 2015, Fitch Ratings (Fitch) affirmed our ratings with a stable outlook along with the ratings of the other five largest Canadian banks.

On May 20, 2015, DBRS revised the outlook on our senior and subordinated debt ratings from stable to negative, along with the outlook of the other five largest Canadian banks. The outlook revision is linked to DBRS' view that expected changes in Canadian legislation and regulation imply that the potential for timely systemic support for domestic systemically important banks is declining.

On July 16, 2015, DBRS affirmed our ratings with a negative outlook along with the ratings of the other five largest Canadian banks.

On August 17, 2015, Kroll Bond Rating Agency, which is registered with the SEC as a nationally recognized statistical rating organization, affirmed the senior unsecured long-term debt and deposit ratings of AA and the short-term rating of K1+ for RBC with a stable outlook. These ratings were unsolicited and RBC did not participate in the ratings process.

On October 9, 2015, Standard and Poor's affirmed our ratings with a negative outlook.

On November 3, 2015, Moody's Investors Service (Moody's) affirmed our ratings with a negative outlook along with the ratings of the other five largest Canadian banks.

Credit ratings, including stability or provisional ratings (collectively, Ratings) are not recommendations to purchase, sell or hold a security in as much as they do not comment on market price or suitability for a particular investor. Ratings may not reflect the potential impact of all risks on the value of securities. In addition, real or anticipated changes in the rating assigned to a security will generally affect the market value of that security. Ratings are subject to revision or withdrawal at any time by the rating organization. Each Rating listed in the chart above should be evaluated independently of any other Rating applicable to our debt and preferred shares. As is customary, RBC pays rating agencies to assign Ratings for the parent company as well as our subsidiaries, and for certain other services.

Additional information about Ratings is provided under “Risk management – Liquidity and funding risk – Credit ratings” on pages 83 and 84 of our 2015 Management’s Discussion and Analysis, which pages are incorporated by reference herein.

## MARKET FOR SECURITIES

**Trading Price and Volume**

The Bank’s common shares are listed on the Toronto Stock Exchange (TSX) in Canada, the New York Stock Exchange (NYSE) in the U.S. and the SIX Swiss Exchange (SIX) in Switzerland. Preferred shares, except the Bank’s First Preferred Shares Series C-1 and C-2, are listed on the TSX. The Bank’s Depository Shares (representing interests in the Bank’s First Preferred Shares Series C-1 and C-2) are listed on the NYSE.

The following table sets out the price range and trading volumes of the common shares on the TSX and the US Composite for the periods indicated. Prices are based on the reported amounts from the TSX Historical Data Access (HDA) and NYSEConnect.

| | Common Shares (TSX) | | | Common Shares (NYSE) | | |
|---|---|---|---|---|---|---|
| Month | High ($) | Low ($) | Volume | High (US$) | Low (US$) | Volume |
| November 2014 | 83.87 | 79.68 | 34,890,231 | 73.80 | 69.95 | 9,412,605 |
| December 2014 | 83.71 | 76.63 | 67,506,904 | 73.62 | 65.88 | 18,375,742 |
| January 2015 | 80.90 | 71.74 | 66,741,753 | 69.15 | 56.40 | 36,934,647 |
| February 2015 | 79.15 | 72.16 | 54,546,327 | 63.27 | 57.14 | 34,840,482 |
| March 2015 | 78.56 | 74.38 | 54,929,013 | 62.78 | 58.41 | 27,274,972 |
| April 2015 | 81.53 | 75.75 | 48,370,606 | 67.49 | 59.91 | 32,270,330 |
| May 2015 | 80.85 | 78.07 | 33,801,547 | 66.72 | 63.03 | 23,849,786 |
| June 2015 | 80.48 | 76.27 | 69,508,996 | 64.57 | 61.13 | 39,274,224 |
| July 2015 | 78.45 | 72.98 | 57,891,928 | 61.84 | 56.12 | 36,557,687 |
| August 2015 | 77.60 | 68.05 | 57,672,406 | 59.61 | 51.27 | 40,189,480 |
| September 2015 | 74.71 | 70.50 | 57,942,855 | 56.89 | 52.84 | 31,397,606 |
| October 2015 | 76.62 | 70.64 | 79,610,442 | 58.20 | 53.48 | 47,047,128 |
| November 2015 | 77.18 | 73.68 | 45,247,007 | 58.45 | 55.24 | 28,312,891 |

The following tables provide the price range and trading volumes of the First Preferred Shares on the TSX for the periods indicated. Prices are based on the reported amounts from the TSX HDA.

| | Series W | | | Series AA | | |
|---|---|---|---|---|---|---|
| Month | High ($) | Low ($) | Volume | High ($) | Low ($) | Volume |
| November 2014 | 25.45 | 25.13 | 69,953 | 25.62 | 25.25 | 73,722 |
| December 2014 | 25.39 | 25.10 | 101,576 | 25.62 | 25.26 | 72,753 |
| January 2015 | 25.43 | 25.11 | 100,913 | 25.60 | 25.05 | 77,282 |
| February 2015 | 25.44 | 25.12 | 64,792 | 25.55 | 25.05 | 132,307 |
| March 2015 | 25.42 | 25.20 | 204,837 | 25.68 | 25.22 | 322,508 |
| April 2015 | 25.39 | 25.00 | 160,647 | 25.59 | 25.01 | 124,171 |
| May 2015 | 25.35 | 25.03 | 124,656 | 25.39 | 25.06 | 97,253 |
| June 2015 | 25.37 | 25.05 | 68,250 | 25.40 | 25.07 | 387,256 |
| July 2015 | 25.23 | 24.55 | 152,186 | 25.40 | 24.75 | 434,352 |
| August 2015 | 24.78 | 23.53 | 89,302 | 25.16 | 24.16 | 118,303 |
| September 2015 | 24.50 | 23.25 | 104,805 | 25.12 | 24.70 | 125,751 |
| October 2015 | 23.81 | 21.75 | 213,937 | 25.08 | 24.40 | 187,075 |
| November 2015 | 23.86 | 22.80 | 118,431 | 25.00 | 24.78 | 121.476 |

| | Series AB | | | Series AC | | | Series AD | | |
|---|---|---|---|---|---|---|---|---|---|
| Month | High ($) | Low ($) | Volume | High ($) | Low ($) | Volume | High ($) | Low ($) | Volume |
| November 2014 | 25.59 | 25.32 | 69,769 | 25.56 | 25.35 | 57,465 | 25.68 | 25.43 | 46,261 |
| December 2014 | 25.56 | 25.32 | 218,144 | 25.75 | 25.38 | 75,458 | 25.80 | 25.59 | 37,300 |
| January 2015 | 25.59 | 25.25 | 55,034 | 25.64 | 25.31 | 307,000 | 25.86 | 25.33 | 136,866 |
| February 2015 | 25.55 | 25.25 | 226,338 | 25.58 | 25.29 | 115,025 | 25.63 | 25.35 | 45,630 |
| March 2015 | 25.68 | 25.33 | 219,265 | 25.55 | 25.33 | 88,884 | 25.70 | 25.43 | 248,211 |
| April 2015 | 25.55 | 25.05 | 72,026 | 25.50 | 25.06 | 102,810 | 25.66 | 25.09 | 135,971 |
| May 2015 | 25.30 | 25.08 | 128,203 | 25.33 | 25.13 | 193,577 | 25.40 | 25.23 | 133,932 |
| June 2015 | 25.30 | 25.15 | 152,322 | 25.45 | 25.20 | 136,919 | 25.46 | 25.30 | 199,908 |
| July 2015 | 25.37 | 24.88 | 300,928 | 25.46 | 24.84 | 152,316 | 25.54 | 24.88 | 264,984 |
| August 2015 | 25.23 | 24.88 | 272,926 | 25.23 | 24.84 | 46,158 | 25.26 | 24.95 | 67,868 |
| September 2015 | 25.22 | 24.94 | 183,512 | 25.14 | 24.80 | 88,097 | 25.47 | 24.74 | 83,184 |
| October 2015 | 25.10 | 24.35 | 374,668 | 25.06 | 24.27 | 134,917 | 25.18 | 24.35 | 199,844 |
| November 2015 | 25.05 | 24.80 | 553,816 | 25.01 | 24.80 | 150,637 | 24.99 | 24.80 | 124,052 |

| | Series AE | | | Series AF | | | Series AG | | |
|---|---|---|---|---|---|---|---|---|---|
| Month | High ($) | Low ($) | Volume | High ($) | Low ($) | Volume | High ($) | Low ($) | Volume |
| November 2014 | 25.70 | 25.45 | 58,281 | 25.82 | 25.55 | 57,691 | 25.79 | 25.55 | 84,443 |
| December 2014 | 25.85 | 25.63 | 77,275 | 25.87 | 25.55 | 68,545 | 25.83 | 25.64 | 36,851 |
| January 2015 | 25.89 | 25.47 | 72,570 | 25.85 | 25.43 | 52,935 | 25.88 | 25.46 | 58,632 |
| February 2015 | 25.64 | 25.43 | 93,072 | 25.69 | 25.46 | 64,959 | 25.68 | 25.37 | 73,139 |
| March 2015 | 25.69 | 25.48 | 208,639 | 25.71 | 25.25 | 119,279 | 25.70 | 25.52 | 127,938 |
| April 2015 | 25.63 | 25.06 | 59,181 | 25.68 | 25.10 | 74,271 | 25.71 | 25.12 | 97,690 |
| May 2015 | 25.37 | 25.20 | 106,320 | 25.36 | 25.25 | 64,958 | 25.41 | 25.28 | 120,377 |
| June 2015 | 25.40 | 25.25 | 235,034 | 25.50 | 25.28 | 206,986 | 25.56 | 25.30 | 175,146 |
| July 2015 | 25.46 | 24.93 | 113,504 | 25.61 | 24.95 | 362,646 | 25.65 | 24.87 | 139,306 |
| August 2015 | 25.19 | 24.79 | 97,606 | 25.15 | 24.89 | 88,438 | 25.30 | 24.95 | 187,405 |
| September 2015 | 25.19 | 24.75 | 96,961 | 25.20 | 24.85 | 60,963 | 25.18 | 24.90 | 68,486 |
| October 2015 | 25.16 | 24.28 | 104,302 | 25.03 | 24.26 | 102,692 | 25.09 | 24.01 | 112,970 |
| November 2015 | 25.03 | 24.80 | 131,740 | 25.00 | 24.74 | 78,913 | 25.05 | 24.86 | 56,369 |

| Month | Series AJ | | | Series AK | | | Series AL | | |
|---|---|---|---|---|---|---|---|---|---|
| | High ($) | Low ($) | Volume | High ($) | Low ($) | Volume | High ($) | Low ($) | Volume |
| November 2014 | 25.80 | 25.52 | 312,490 | 25.97 | 25.75 | 50,000 | 26.64 | 26.12 | 50,914 |
| December 2014 | 25.74 | 25.41 | 104,247 | 25.85 | 25.65 | 19,349 | 26.59 | 25.96 | 47,800 |
| January 2015 | 25.76 | 24.80 | 222,487 | 25.85 | 23.30 | 33,870 | 26.75 | 25.90 | 117,680 |
| February 2015 | 25.68 | 25.00 | 146,491 | 24.65 | 23.31 | 57,065 | 26.34 | 25.93 | 198,825 |
| March 2015 | 25.66 | 25.38 | 126,288 | 24.36 | 23.86 | 25,905 | 26.60 | 26.06 | 206,339 |
| April 2015 | 25.56 | 25.18 | 93,450 | 24.45 | 23.99 | 44,585 | 26.44 | 25.85 | 101,835 |
| May 2015 | 25.50 | 25.14 | 203,639 | 24.49 | 24.18 | 148,940 | 26.15 | 25.85 | 70,471 |
| June 2015 | 25.47 | 25.18 | 313,784 | 25.02 | 24.32 | 103,081 | 26.03 | 25.76 | 240,225 |
| July 2015 | 25.40 | 24.81 | 267,729 | 24.40 | 23.35 | 22,568 | 26.18 | 25.49 | 132,908 |
| August 2015 | 25.10 | 24.54 | 340,503 | 23.55 | 23.00 | 10,960 | 25.89 | 25.25 | 131,874 |
| September 2015 | 24.98 | 23.63 | 189,771 | 23.33 | 21.70 | 25,820 | 25.75 | 25.00 | 188,729 |
| October 2015 | 24.90 | 22.53 | 154,925 | 23.15 | 21.30 | 16,555 | 25.30 | 24.18 | 280,124 |
| November 2015 | 24.68 | 24.15 | 440,110 | 23.50 | 22.56 | 27,163 | 25.48 | 24.82 | 272,781 |

| Month | Series AX* | | | Series AZ | | | Series BB | | |
|---|---|---|---|---|---|---|---|---|---|
| | High ($) | Low ($) | Volume | High ($) | Low ($) | Volume | High ($) | Low ($) | Volume |
| November 2014 | 25.02 | 24.97 | 22,455 | 25.72 | 25.49 | 540,434 | 25.57 | 25.32 | 270,072 |
| December 2014 | - | - | - | 25.75 | 25.25 | 249,879 | 25.72 | 25.12 | 234,193 |
| January 2015 | - | - | - | 25.84 | 24.90 | 352,430 | 25.69 | 24.61 | 257,216 |
| February 2015 | - | - | - | 25.35 | 24.79 | 408,541 | 25.24 | 24.65 | 266,145 |
| March 2015 | - | - | - | 25.24 | 24.75 | 660,074 | 25.05 | 24.63 | 472,915 |
| April 2015 | - | - | - | 25.08 | 23.70 | 355,307 | 24.94 | 23.70 | 437,534 |
| May 2015 | - | - | - | 24.98 | 24.09 | 313,142 | 24.79 | 23.90 | 451,948 |
| June 2015 | - | - | - | 24.57 | 22.65 | 239,326 | 24.10 | 22.51 | 184,372 |
| July 2015 | - | - | - | 23.88 | 21.00 | 344,798 | 23.18 | 20.73 | 492,866 |
| August 2015 | - | - | - | 22.80 | 20.70 | 232,924 | 22.68 | 20.97 | 195,903 |
| September 2015 | - | - | - | 22.00 | 18.65 | 359,719 | 21.92 | 18.56 | 213,880 |
| October 2015 | - | - | - | 19.95 | 17.10 | 905,287 | 19.69 | 16.92 | 833,567 |
| November 2015 | - | - | - | 20.85 | 18.37 | 655,511 | 20.75 | 18.52 | 696,608 |

* We redeemed all of our issued and outstanding Non-Cumulative First Preferred Shares Series AX on November 24, 2014.

| Month | Series BD | | | Series BF | | | Series BH | | |
|---|---|---|---|---|---|---|---|---|---|
| | High ($) | Low ($) | Volume | High ($) | Low ($) | Volume | High ($) | Low ($) | Volume |
| January 2015 | 24.98 | 24.82 | 1,134,296 | - | - | - | - | - | - |
| February 2015 | 25.24 | 24.90 | 2,324,980 | - | - | - | - | - | - |
| March 2015 | 25.15 | 24.80 | 1,811,697 | 24.74 | 23.75 | 2,116,113 | - | - | - |
| April 2015 | 25.15 | 24.70 | 1,040,928 | 24.85 | 24.43 | 866,996 | - | - | - |
| May 2015 | 25.09 | 24.61 | 293,783 | 24.91 | 24.56 | 324,253 | - | - | - |
| June 2015 | 24.97 | 24.60 | 209,211 | 24.87 | 24.40 | 138,056 | 25.52 | 24.57 | 1,054,831 |
| July 2015 | 24.78 | 23.59 | 239,244 | 24.60 | 23.67 | 219,583 | 25.40 | 23.85 | 195,865 |
| August 2015 | 24.25 | 22.25 | 476,734 | 23.88 | 20.63 | 67,222 | 24.95 | 23.81 | 68,279 |
| September 2015 | 23.71 | 19.75 | 237,472 | 23.43 | 19.55 | 132,154 | 24.80 | 22.44 | 102,438 |
| October 2015 | 21.46 | 18.00 | 1,005,836 | 21.15 | 17.77 | 549,493 | 23.48 | 22.31 | 140,754 |
| November 2015 | 23.68 | 20.50 | 374,432 | 22.84 | 20.25 | 188,917 | 23.48 | 22.31 | 140,754 |

| Month | Series BI | | | Series BJ | | |
|---|---|---|---|---|---|---|
| | High ($) | Low ($) | Volume | High ($) | Low ($) | Volume |
| July 2015 | 24.67 | 23.62 | 551,709 | - | - | - |
| August 2015 | 24.70 | 23.31 | 345,367 | - | - | - |
| September 2015 | 24.59 | 22.50 | 194,488 | - | - | - |
| October 2015 | 23.47 | 22.26 | 201,077 | 24.93 | 23.60 | 1,009,400 |
| November 2015 | 23.81 | 23.07 | 114,148 | 24.92 | 24.40 | 283,776 |

The following table provides the price range and trading volumes of the Depository Shares on the NYSE for the period indicated. Prices are based on the reported amounts from NYSEConnect.

| Month | Series C-1 | | | Series C-2 | | |
|---|---|---|---|---|---|---|
| | High ($) | Low ($) | Volume | High ($) | Low ($) | Volume |
| November 2015 | 25.62 | 24.15 | 614,984 | 30.00 | 28.07 | 31,402 |

## DIVIDENDS

The Bank has had an uninterrupted history of paying dividends on its common shares and on each of its outstanding series of first preferred shares. Information about the Bank's dividends paid or payable per share on the common shares and each outstanding series of first preferred shares in each of the three most recently completed years appears under the heading "Selected share data" in the Capital management section on page 98 of our 2015 Management's Discussion and Analysis for the year ended October 31, 2015, which section is incorporated by reference herein. Information about restrictions on the payment of dividends appears under the heading "Restrictions on the payment of dividends" in Note 21 on page 183 of our 2015 Annual Consolidated Financial Statements for the year ended October 31, 2015, which note is incorporated by reference herein.

The declaration amount and payment of future dividends will be subject to the discretion of the Bank's board of directors, and will be dependent upon the Bank's results of operations, financial condition, cash requirements and future regulatory restrictions on the payment of dividends and other factors deemed relevant by the board of directors. Information about our dividends and our dividend payout ratio (common share dividends as a percentage of net income less preferred share dividends) is provided under the "Capital management" section beginning on page 91 of our 2015 Management's Discussion and Analysis, which section is incorporated by reference herein.

## DIRECTORS AND EXECUTIVE OFFICERS

**Directors**

The following are the Bank's directors as at December 1, 2015:

| Name, and Year Elected | Province/State and Country of Residence | Occupation |
|---|---|---|
| W. Geoffrey Beattie (2001) | Ontario, CAN | Chief Executive Officer, Generation Capital |
| Jacynthe Côté (2014) | Quebec, CAN | Corporate Director |
| Toos N. Daruvala (2015) | New York, U.S.A | Director and Senior Partner, McKinsey & Company |

| | | |
|---|---|---|
| David F. Denison (2012) | Ontario, CAN | Corporate Director |
| Richard L. George (2012) | Alberta, CAN | Partner, Novo Investment Group |
| Alice D. Laberge (2005) | British Columbia, CAN | Corporate Director |
| Michael H. McCain (2005) | Ontario, CAN | President and Chief Executive Officer, Maple Leaf Foods Inc. |
| David I. McKay (2014) | Ontario, CAN | President and Chief Executive Officer, Royal Bank of Canada |
| Heather Munroe-Blum (2011) | Quebec, CAN | Professor of Medicine and Principal Emerita, McGill University |
| J. Pedro Reinhard (2000) | Florida, U.S.A. | President, Reinhard & Associates |
| Thomas A. Renyi (2013) | Maine, U.S.A. | Corporate Director |
| Edward Sonshine (2008) | Ontario, CAN | Chief Executive Officer, RioCan Real Estate Investment Trust |
| Kathleen P. Taylor (2001) | Ontario, CAN | Chair of the Board, Royal Bank of Canada |
| Bridget A. van Kralingen (2011) | New York, U.S.A. | Senior Vice-President, IBM Global Business Services, IBM Corporation |
| Thierry Vandal (2015) | New York, USA | President, Axium Infrastructure US Inc. |
| Victor L. Young (1991) | Newfoundland and Labrador, CAN | Corporate Director |

Directors are elected annually and hold office until the next annual meeting of shareholders. Since November 1, 2010, the directors have held the principal occupations described above, except for the following:

*Mr. W. Geoffrey Beattie* was President and Chief Executive Officer of The Woodbridge Company Limited prior to December 2012 and Deputy Chairman of the Thomson Reuters Corporation prior to May 2013.

*Ms. Jacynthe Côté* was President and Chief Executive Officer of Rio Tinto Alcan prior to September 2014.

*Mr. David F. Denison* was President and Chief Executive Officer of the Canada Pension Plan Investment Board prior to July 2012.

*Mr. Richard L. George* was Chief Executive Officer of Suncor Energy Inc. prior to May 2012 and President and Chief Executive Officer of Suncor Energy Inc. prior to December 2011.

*Mr. David I. McKay* was President of Royal Bank of Canada prior to August 2014, Group Head, Personal & Commercial Banking of Royal Bank of Canada prior to March 2014 and Group Head, Canadian Banking of Royal Bank of Canada prior to 2012.

*Dr. Heather Munroe-Blum* was Principal and Vice-Chancellor of McGill University prior to June 2013.

*Ms. Kathleen P. Taylor* was President and Chief Executive Officer of Four Seasons Hotels and Resorts prior to January 2013.

*Ms. Bridget A. van Kralingen* was General Manager of IBM North America from 2010 to January 2012.

*Mr. Thierry Vandal* was President and Chief Executive Officer of Hydro-Québec prior to May 2015.

**Committees of the Board**

*Audit Committee*: D.F. Denison (Chair), J. Côté, A.D. Laberge, J.P. Reinhard, T.A. Renyi, E. Sonshine, T. Vandal.

*Risk Committee*: W.G. Beattie (Chair), T.N. Daruvala, D.F. Denison, R.L. George, M.H. McCain, H. Munroe-Blum, T.A. Renyi and B.A. van Kralingen.

*Governance Committee*: H. Munroe-Blum (Chair), J. Côté, T.N. Daruvala, M.H. McCain, E. Sonshine and V.L. Young.

*Human Resources Committee*: R.L. George (Chair), W.G. Beattie, A.D. Laberge, J.P. Reinhard, B.A. van Kralingen, T. Vandal and V. L. Young.

**Executive Officers**

The following are the Bank's executive officers as at December 1, 2015:

| Name | Province and Country of Residence | Title |
|---|---|---|
| Janice R. Fukakusa | Ontario, CAN | Chief Administrative Officer and Chief Financial Officer |
| Doug Guzman | Ontario, CAN | Group Head, Wealth Management and Insurance |
| Zabeen Hirji | Ontario, CAN | Chief Human Resources Officer |
| Mark Hughes | Ontario, CAN | Chief Risk Officer |
| A. Douglas McGregor | Ontario, CAN | Group Head, Capital Markets and Investor & Treasury Services |
| David I. McKay | Ontario, CAN | President and Chief Executive Officer |
| Bruce Ross | Ontario, CAN | Group Head, Technology and Operations |
| Jennifer Tory | Ontario, CAN | Group Head, Personal & Commercial Banking |

Since November 1, 2010, the executive officers have held the positions described above, except for the following:

Mr. Guzman was appointed to Group Executive in his role as Group Head, Wealth Management and Insurance effective November 1, 2015. Prior to his current role, Mr. Guzman was Managing Director and Head Global Investment Banking, Capital Markets since 2006.

Mr. Hughes was appointed to Group Executive in his role as Chief Risk Officer of Royal Bank of Canada effective January 2014. Prior to his current role, Mr. Hughes was Executive Vice-President and Chief Operating Officer for RBC Capital Markets since November 2008.

Mr. McGregor was appointed to Group Executive in his role as Co-Group Head, Capital Markets in November 2008 and effective October 31, 2012 was appointed Co-Group Head, Capital Markets and Investor & Treasury Services. Mr. McGregor assumed full responsibilities for these businesses effective December 4, 2013.

Mr. McKay was appointed President of Royal Bank of Canada effective in February 2014 and Chief Executive Officer effective in August 2014. Mr. McKay was appointed to Group Executive in his role as Group Head, Canadian Banking in April 2008 and effective October 31, 2012 was appointed Group Head, Personal & Commercial Banking.

Mr. Ross was appointed to Group Executive in his role as Group Head, Technology and Operations effective in January 2014. Prior to joining RBC, Mr. Ross was with IBM, holding a series of progressively more senior positions.

Ms. Tory was appointed to Group Executive in her role as Group Head, Personal & Commercial Banking effective April 2014. Prior to her current role, Ms. Tory was Regional President, Greater Toronto Region since November 2005.

**Ownership of Securities**

To our knowledge, as at October 31, 2015, the directors and executive officers, as a group, beneficially own or exercise control or direction over less than one per cent (1%) of our common and preferred shares. None of our directors or executive officers holds shares of our subsidiaries except where required for qualification as a director of a subsidiary.

**Cease Trade Orders, Bankruptcies, Penalties or Sanctions**

To the best of our knowledge, no director or executive officer,

(a) is, as at December 1, 2015, or has been, within the 10 years before, a director, chief executive officer or chief financial officer of any company (including our company), that while that person was acting in that capacity,

  (i) was the subject of a cease trade or similar order or an order that denied the relevant company access to any exemption under Canadian securities legislation[3], for a period of more than 30 consecutive days, or

  (ii) was subject to an event that resulted, after the director or executive officer ceased to be a director, chief executive officer or chief financial officer, in the company being the subject of a cease trade or similar order or an order that denied the relevant company access to any exemption under Canadian securities legislation[3], for a period of more than 30 consecutive days, or

[3] National Instrument 14-101 restricts the meaning of “securities legislation” to Canadian provincial and territorial legislation and “securities regulatory authority” to Canadian provincial and territorial securities regulatory authorities.

(b) is, as at December 1, 2015 or has been, within the 10 years before, a director or executive officer of any company (including our company), that while that person was acting in that capacity or within a year of that person ceasing to act in that capacity, became bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency or was subject to or instituted any proceedings, arrangement or compromise with creditors or had a receiver, receiver manager or trustee appointed to hold its assets, or

(c) has, within the 10 years before December 1, 2015, become bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency, or become subject to or instituted any proceedings, arrangement or compromise with creditors, or had a receiver, receiver manager or trustee appointed to hold the assets of the director or executive officer,

Except for the following:

*Mr. George* is a director of Penn West Petroleum Ltd. (Penn West). On August 5, 2014, the Alberta Securities Commission issued a management cease trade order against the directors and certain officers of Penn West, which terminated on September 23, 2014. The management cease trade order was issued in connection with the restatement of certain of Penn West's financial statements and related management's discussion and analysis.

To the best of our knowledge, none of our directors or executive officers have been subject to (a) any penalties or sanctions imposed by a court relating to Canadian securities legislation[4] or by a Canadian securities regulatory authority [4] or has entered into a settlement agreement with a Canadian securities regulatory authority[4], or (b) any other penalties or sanctions imposed by a court or regulatory body that would likely be considered important to a reasonable investor in making an investment decision.

**Conflicts of Interest**

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

## LEGAL PROCEEDINGS AND REGULATORY ACTIONS

In the ordinary course of our business, we are routinely involved in or parties to various ongoing, pending and threatened legal actions and proceedings.

A description of certain legal proceedings to which we are a party appears in "Litigation" in Note 27 on pages 192 and 193 of our 2015 Annual Consolidated Financial Statements for the year ended October 31, 2015, which note is incorporated by reference.

Since October 31, 2014, (a) there have been no penalties or sanctions imposed against us by a court relating to Canadian securities legislation [4] or by a Canadian securities regulatory authority[4], (b) there have been no other penalties or sanctions imposed by a court or regulatory body against us that would likely be considered important to a reasonable investor in making an investment decision, and (c) we have not entered into any settlement agreements with a court relating to Canadian securities legislation[4] or with a Canadian securities regulatory authority [4].

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

## INTEREST OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS

To the best of our knowledge, there were no directors or executive officers or any associate or affiliate of a director or executive officer with a material interest in any transaction within the three most recently completed financial years or during the current financial year that has materially affected us or is reasonably expected to materially affect us.

## TRANSFER AGENT AND REGISTRAR

For Canada and the Caribbean, Computershare Trust Company of Canada is the transfer agent and registrar for our common shares and our preferred shares. Their principal offices are in the cities of: Halifax, NS; Montreal, QC; Toronto, ON; Calgary, AB; and Vancouver, BC. In the U.S., Computershare Trust Company, N.A. is the co-transfer agent located in Canton, Massachusetts. In the U.K., Computershare Investor Services PLC is the co-transfer agent located in Bristol, England.

## EXPERTS

Deloitte LLP (Deloitte), Chartered Professional Accountants, prepared the Report of Independent Registered Public Accounting Firm in respect of our audited Annual Consolidated Financial Statements and the Report of Independent Registered Public Accounting Firm in respect of our internal control over financial reporting.

## AUDIT COMMITTEE

**Audit Committee Mandate**

The mandate of the Audit Committee is attached as Appendix C to this Annual Information Form.

**Composition of Audit Committee**

The Audit Committee consists of David F. Denison (Chair), Jacynthe Côté, Alice D. Laberge, J. Pedro Reinhard, Thomas A. Renyi, Edward Sonshine and Thierry Vandal. The board has determined that each member of the Audit Committee is independent under our Director Independence Policy, which incorporates the independence standards under applicable Canadian and U.S. laws and regulations and none receives, directly or indirectly, any compensation from us other than ordinary course compensation for service as a member of the board of directors and its committees or of a board of directors of one or more of our subsidiaries. All members of the Audit Committee are financially literate within the meaning of *National Instrument 52-110 – Audit Committees* and of the Corporate Governance Standards of the NYSE. In considering the criteria for determining financial literacy, the board of directors looks at the ability of a director to read and understand a balance sheet, an income statement and a cash flow statement of a financial institution. The board has determined that each of David F. Denison, Jacynthe Côté, Alice D. Laberge, J. Pedro Reinhard, Thomas A. Renyi and Thierry Vandal qualifies as an “audit committee financial expert” as defined by the SEC.

**Relevant Education and Experience of Audit Committee Members**

In addition to each member's general business experience, the education and experience of each Audit Committee member that is relevant to the performance of his or her responsibilities as an Audit Committee member is as follows:

*Jacynthe Côté, B.Sc.* earned her Bachelor of Science degree from Laval University. Ms. Côté was President and Chief Executive Officer of Rio Tinto Alcan from 2009 to 2014 and was President and Chief Executive Officer of Rio Tinto Alcan's Primary Metal business group, following Rio Tinto's acquisition of Alcan Inc. in October 2007. Ms. Côté has been a member of our Audit Committee since October 2014.

*David F. Denison, O.C., B.Sc., B.Ed., FCPA, FCA*, earned his bachelor degrees in mathematics and education from the University of Toronto and is a Chartered Professional Accountant and a Fellow of CPA Ontario. Mr. Denison was President and Chief Executive Officer of the Canada Pension Plan Investment Board from 2005 to 2012 and is a director of Allison Transmission Holdings, Inc. and BCE Inc. and is also a director and Chair of the Board of Hydro One Limited. Mr. Denison has been a member of our Audit Committee since August 2012.

*Alice D. Laberge, B.Sc., M.B.A*., earned her Bachelor of Science degree from the University of Alberta and her M.B.A. from the University of British Columbia. Ms. Laberge was President and Chief Executive Officer of Fincentric Corporation until July 2005 and prior to December 2003, was its Chief Financial Officer. Ms. Laberge is a director of Potash Corporation of Saskatchewan and Russel Metals Inc. and has been a member of our Audit Committee since March 2006.

*J. Pedro Reinhard, M.B.A.,* earned his M.B.A. at the Escola de Administracão de Empresas Fundação Getulio Vargas (Sao Paulo) and attended post-graduate studies at the University of Cologne in Germany and Stanford University. Mr. Reinhard is the President of Reinhard & Associates and was Executive Vice-President and Chief Financial Officer of The Dow Chemical Company prior to October 2005. Mr. Reinhard is a director of Colgate-Palmolive Company and Sigma-Aldrich Corporation and is also a past chairman of the CFO Council Conference Board. Mr. Reinhard has been a member of our Audit Committee since May 2000.

*Thomas A. Renyi, B.A., M.B.A.,* earned his Bachelor of Arts in Business Administration and his M.B.A. from Rutgers University. Mr. Renyi served as Executive Chairman of The Bank of New York Mellon from 2007 until he retired in 2008. Prior to that, he was Chairman and Chief Executive Officer of The Bank of New York Company, Inc. and The Bank of New York for 10 years. Mr. Renyi serves as a director of The Hartford Financial Services Group Inc., and Public Service Enterprise Group. Mr. Renyi has been a member of our Audit Committee since February 2014.

*Edward Sonshine*, *Q.C., B.A.*, earned his law degree from Osgoode Hall Law School and a Bachelor of Arts degree from the University of Toronto. Mr. Sonshine is Chief Executive Officer and a director of RioCan Real Estate Investment Trust and also served as its President from 1994 to 2012. Mr. Sonshine also serves as a director of Cineplex Inc. Mr. Sonshine has been a member of our Audit Committee since February 2014.

*Thierry Vandal, B.Eng., M.B.A.*, earned his engineering degree from École Polytechnique de Montréal and his M.B.A. from École des Hautes Études Commerciales (HEC) Montréal. Mr. Vandal is President of Axium Infrastructure U.S. Inc., and from 2005 to May 2015 served as President and Chief Executive Officer of Hydro-Québec. Mr. Vandal is a director of Veresen Inc. Mr. Vandal has been a member of our Audit Committee since July 2015.

**Pre-Approval Policies and Procedures**

The Audit Committee has adopted a policy that requires pre-approval by the Audit Committee of audit services and other services within permissible categories of non-audit services. The policy prohibits us from engaging the auditor for "prohibited" categories of non-audit services. A copy of our Pre-Approval Policies and Procedures can be found in Appendix D.

**Independent Registered Public Accounting Firm Fees**

Deloitte became our sole auditor following a tender process on September 23, 2003. Deloitte or its predecessor firms have been involved in our audit since 1917 as one of a panel of auditors used by the Bank. Fees relating to the years ended October 31, 2015 and October 31, 2014 to Deloitte and its affiliates were $31.1 million and $28.3[1] million respectively and are detailed below. The nature of each category of fees is also described below.

Following a tender process, the Audit Committee has selected PricewaterhouseCoopers LLP (PwC) to be our external auditor for fiscal 2016 subject to shareholder approval at our 2016 annual meeting.

| | **Year ended October 31, 2015** ($Millions) | | | **Year ended October 31, 2014[1]** ($Millions) | | |
|---|---|---|---|---|---|---|
| | **Bank and Subsidiaries** | **Mutual Funds[2]** | **Total** | **Bank and Subsidiaries** | **Mutual Funds[2]** | **Total** |
| **Audit fees** | $22.6 | $1.7 | **$24.3** | $21.6 | $1.6 | **$23.2** |
| **Audit-related fees** | 5.3 | - | **5.3** | 3.9 | - | **3.9** |
| **Tax fees** | - | 0.3 | **0.3** | - | 0.3 | **0.3** |
| **All other fees** | 0.7 | 0.5 | **1.2** | 0.4 | 0.5 | **0.9** |
| **Total fees** | $28.6 | $2.5 | **$31.1** | $25.9 | $2.4 | **$28.3** |

[1] The 2014 amounts have been restated from the prior year to reflect $0.1 million of cancellations identified during 2015, which relate to the year ended October 31, 2014.
[2] The Mutual Funds category includes fees paid for professional services provided by Deloitte for certain Mutual Funds managed by subsidiaries of the Bank. In addition to other administrative costs, the subsidiaries are responsible for the auditors' fees for professional services rendered in connection with the annual audit, statutory and regulatory filings and other services for the Mutual Funds in return for a fixed administration fee.

**Audit Fees**

Audit fees were paid for professional services rendered by the auditor for the integrated audit of the Annual Consolidated Financial Statements of the Bank, including its audit of the effectiveness of our internal control over financial reporting, and any financial statement audits of our subsidiaries. In addition, audit fees were paid for services that generally only the Bank's independent auditor reasonably can provide including services provided in connection with statutory and regulatory filings related to prospectuses and other offering documents.

**Audit-Related Fees**

Audit-related fees were paid for assurance and related services that are reasonably related to the performance of the audit or review of our Annual Consolidated Financial Statements and are not reported under the audit fees item above. These services consisted of:

- special attest services traditionally performed by the Bank's independent auditor;
- reporting on the effectiveness of internal controls as required by contract or for business reasons;
- the audits of the financial statements of our various pension plans and charitable foundations;
- the audits of various trusts and limited partnerships; and
- the transition of the audit of the consolidated financial statements of the Bank and the audits of our subsidiaries to PwC.

**Tax Fees**

Tax fees were paid for tax compliance services including the review of original and amended tax returns and assistance in completing routine tax schedules and calculations.

**All Other Fees**

These services consist of French translation of financial statements and related continuous disclosure and other public documents containing financial information for us and certain of our subsidiaries as well as accounting and other research publications.

## ADDITIONAL INFORMATION

Additional information, including directors' and officers' remuneration and indebtedness, principal holders of our securities, and securities authorized for issuance under equity compensation plans, where applicable, is contained in the Bank's Management Proxy Circular for the most recent annual meeting of shareholders. Additional financial information is provided in our Annual Consolidated Financial Statements and Management's Discussion and Analysis which are included in our 2015 Annual Report for the year ended October 31, 2015.

Copies of this Annual Information Form, our 2015 Annual Report and Management Proxy Circular in respect of the most recent annual meeting of shareholders may be obtained from Investor Relations at 200 Bay Street, North Tower, 4th Floor, Toronto, Ontario, M5J 2W7 (416-955-7802).

This Annual Information Form, the Annual Consolidated Financial Statements and Management's Discussion and Analysis for the year ended October 31, 2015, as well as additional information about us may be found on our website at rbc.com, on SEDAR, the Canadian Securities Administrators' website, at sedar.com, and on the EDGAR section of the SEC's website at sec.gov.

Information contained in or otherwise accessible through the websites mentioned in this Annual Information Form does not form a part of this Annual Information Form. All references in this Annual Information Form to websites are inactive textual references and are for your information only.

## TRADEMARKS

Trademarks used in this annual information form include the LION & GLOBE Symbol, ROYAL BANK OF CANADA, RBC, RBC CAPITAL MARKETS and RBC ENVIRONMENTAL BLUEPRINT, which are trademarks of Royal Bank of Canada used by Royal Bank of Canada and/or by its subsidiaries under license. All other trademarks mentioned in this annual information form, which are not the property of Royal Bank of Canada, are owned by their respective holders.

## APPENDIX A – PRINCIPAL SUBSIDIARIES

| Principal subsidiaries (1) | Principal office address (2) | Carrying value of voting shares owned by the Bank (3) |
|---|---|---|
| **Royal Bank Holding Inc.** | Toronto, Ontario, Canada | 48,117 |
| Royal Mutual Funds Inc. | Toronto, Ontario, Canada | |
| RBC Insurance Holdings Inc. | Mississauga, Ontario, Canada | |
| RBC General Insurance Company | Mississauga, Ontario, Canada | |
| RBC Insurance Company of Canada | Mississauga, Ontario, Canada | |
| RBC Life Insurance Company | Mississauga, Ontario, Canada | |
| RBC Direct Investing Inc. | Toronto, Ontario, Canada | |
| RBC Phillips, Hager & North Investment Counsel Inc. | Toronto, Ontario, Canada | |
| R.B.C. Holdings (Bahamas) Limited | Nassau, New Providence, Bahamas | |
| RBC Caribbean Investments Limited | George Town, Grand Cayman, Cayman Islands | |
| Royal Bank of Canada Insurance Company Ltd. | St. Michael, Barbados | |
| Investment Holdings (Cayman) Limited | George Town, Grand Cayman, Cayman Islands | |
| RBC (Barbados) Funding Ltd. | St. Michael, Barbados | |
| RBC Capital Markets Arbitrage S.A. | Luxembourg, Luxembourg | |
| Capital Funding Alberta Limited | Calgary, Alberta, Canada | |
| RBC Global Asset Management Inc. | Toronto, Ontario, Canada | |
| RBC Investor Services Trust | Toronto, Ontario, Canada | |
| RBC Investor Services Bank S.A. | Esch-sur-Alzette, Luxembourg | |
| RBC (Barbados) Trading Bank Corporation | St. James, Barbados | |
| BlueBay Asset Management (Services) Ltd | London, England | |
| **RBC USA Holdco Corporation (2)** | New York, New York, U.S. | 13,558 |
| RBC Capital Markets, LLC (2) | New York, New York, U.S. | |
| RBC Global Asset Management (U.S.) Inc. | Minneapolis, Minnesota, U.S. | |
| **RBC Dominion Securities Limited** | Toronto, Ontario, Canada | 7,326 |
| RBC Dominion Securities Inc. | Toronto, Ontario, Canada | |
| **RBC Holdings (Barbados) Ltd.** | St. Michael, Barbados | 3,479 |
| RBC Financial (Caribbean) Limited | Port of Spain, Trinidad and Tobago | |
| **RBC Finance S.à r.l./B.V. (2)** | Amsterdam, Netherlands | 3,282 |
| RBC Holdings (Luxembourg) S.A R.L. | Luxembourg, Luxembourg | |
| RBC Holdings (Channel Islands) Limited | Jersey, Channel Islands | |
| Royal Bank of Canada (Channel Islands) Limited | Guernsey, Channel Islands | |
| **RBC Capital Trust** | Toronto, Ontario, Canada | 2,133 |
| **RBC Europe Limited** | London, England | 1,860 |
| **Royal Bank Mortgage Corporation** | Toronto, Ontario, Canada | 1,060 |
| **The Royal Trust Company** | Montreal, Quebec, Canada | 572 |
| **RBC Bank (Georgia), National Association (2)** | Atlanta, Georgia, U.S. | 326 |
| **Royal Trust Corporation of Canada** | Toronto, Ontario, Canada | 243 |
| **RBC Covered Bond Guarantor Limited Partnership** | Toronto, Ontario, Canada | 237 |

(1) The Bank directly or indirectly controls each subsidiary.

(2) Each subsidiary is incorporated or organized under the laws of the state or country in which the principal office is situated, except for RBC USA Holdco Corporation which is incorporated under the laws of the State of Delaware, U.S., RBC Capital Markets, LLC, which is organized under the laws of the State of Minnesota, U.S. RBC Finance S.à r.l. / B.V. is a company incorporated in the Netherlands with its official seat in Amsterdam, the Netherlands, and place of effective management, central administration, and principal establishment in Luxembourg, Grand Duchy of Luxembourg. RBC Bank (Georgia), National Association is a national banking association organized under the laws of the U.S. with its main office in Atlanta, Georgia and management offices in Raleigh, North Carolina.

(3) The carrying value (in millions of dollars) of voting shares is stated as the Bank's equity in such investments.

## APPENDIX B – EXPLANATION OF RATINGS AND OUTLOOK

| INSTITUTION | RATING | OUTLOOK |
|---|---|---|
| **Moody's** | ● Obligations rated 'Aa' are judged to have high intrinsic, or standalone, financial strength, and subject to very low credit risk.<br>● Obligations rated 'A' are judged to be upper-medium grade intrinsic, or standalone, financial strength, subject to lower credit risk.<br>● Issuers assessed Baa are judged to have medium-grade intrinsic, or standalone, financial strength, subject to moderate credit risk and, as such, may possess certain speculative credit elements absent any possibility of extraordinary support from an affiliate or a government.<br>● Issuers (or supporting institutions) rated Prime-1 have a superior ability to repay short-term debt obligations.<br>● The modifier 3 indicates a ranking in the lower end of that generic rating category. | A negative outlook indicates a higher likelihood of a rating change. |
| **Standard & Poor's** | ● An obligation rated 'AA' differs from the highest-rated obligations only to a small degree. The obligor's capacity to meet its financial commitment on the obligation is very strong.<br>● An obligation rated 'A' has strong capacity to meet its financial commitments but is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligations in higher-rated categories.<br>● The addition of a plus or minus sign shows the relative standing within the major rating categories.<br>● An obligation rated 'BBB' exhibits adequate protection parameters. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitment on the obligation.<br>● A short term obligation rated 'A-1+' has extremely strong capacity to meet its financial commitments. | A negative outlook indicates a higher likelihood of a rating change. |
| **Fitch** | ● 'AA' ratings denote expectations of very low credit risk and are judged to be of very high credit quality. They indicate very strong capacity for payment of financial commitments. This capacity is not significantly vulnerable to foreseeable events.<br>● The modifiers "+" or "-" may be appended to a rating to denote relative status within major rating categories.<br>● An obligation rated 'F1' has the highest short-term credit quality. It indicates the strongest intrinsic capacity for timely payment of financial commitments. The modifier '+' denotes any exceptionally strong credit feature. | A stable outlook indicates that a rating is not likely to change. |
| **DBRS** | ● An obligation rated 'AA' is of superior credit quality. The capacity for the payment of financial obligations is considered high and it is unlikely to be significantly vulnerable to future events. In many cases they differ from obligations rated 'AAA' only to a small degree.<br>● Preferred shares rated Pfd-2 are of satisfactory credit quality. Protection of dividends and principal is still substantial, but earnings, the balance sheet and coverage ratios are not as strong as Pfd-1 rated companies. Generally, Pfd-2 ratings correspond with companies whose senior bonds are rated in the A category.<br>● R-1 (high) is the highest credit quality. The capacity for the payment of short-term financial obligations as they fall due is exceptionally high. Unlikely to be adversely affected by future events.<br>● Each rating category is denoted by the subcategories "high" and "low". The absence of either a "high" or "low" designation indicated the rating is in the middle of the category. | A stable outlook indicates that a rating is not likely to change.<br><br>A negative outlook indicates a higher likelihood of a rating change. |

| INSTITUTION | RATING | OUTLOOK |
|---|---|---|
| **Kroll Bond Rating Agency** | • An obligation rated 'AA' is determined to have minimal risk of loss due to credit-related events. Such obligors and obligations are deemed very high quality.<br>• A short-term obligation rated K1 has a very strong ability to meet short-term obligations.<br>• The modifiers "-" or "+" may be appended to ratings in categories AA through CCC to indicate, respectively, upper and lower risk levels within the broader category. | A stable outlook indicates that a rating is not likely to change (generally encompasses a horizon not exceeding two years). |

**WHAT THE RATINGS ADDRESS:**

**Long-term Senior Debt**

Credit ratings are the current opinion of the rating agency on creditworthiness of an obligor with respect to fixed-income obligations whose original maturity is of a medium to long-term nature. They address the possibility that a financial obligation will not be honoured as promised and reflect both the likelihood of default and any financial loss suffered in the event of default.

**Subordinated Debt**

Credit ratings are the current opinion of the rating agency on creditworthiness of an obligor with respect to a specific financial obligation and a specific class of financial obligation for a specific financial program. Ratings take into consideration the creditworthiness of guarantors, insurers, or other forms of credit enhancement on the obligation and takes into account the currency in which the obligation is denominated.

**Preferred Stock**

Preferred stock ratings address the issuer's capacity and willingness to pay dividends and principal, in case of limited life, on a timely basis. They address the likelihood of timely payment of dividends, notwithstanding the legal ability to pass on or defer a dividend payment.

**Rating Outlook**

Rating Outlook assesses the potential direction of a credit rating over the intermediate to longer term. In determining a Rating Outlook consideration is given to any changes in the economic and fundamental business conditions. An Outlook is not necessarily a precursor of a rating change.

# APPENDIX C – AUDIT COMMITTEE MANDATE

**ROYAL BANK OF CANADA**
**(hereinafter referred to as the "Bank")**

**A. PURPOSE AND DUTIES OF THE COMMITTEE**

**1. General Purpose**

The Audit Committee is responsible for assisting the Bank's board of directors (the "Board") in its oversight of (i) the integrity of the Bank's financial statements; (ii) the qualifications, performance and independence of the external auditors; (iii) the performance of the Bank's internal audit function; (iv) internal controls; and (v) compliance with legal and regulatory requirements.

**2. Financial Statements and other Documents**

The Committee will regularly review and discuss the following:

a) prior to review and approval by the Board, the Bank's annual statement which includes its annual consolidated financial statements, its quarterly financial statements, and related management's discussion and analysis;

b) earnings releases on interim and annual results, the annual information form, the annual report and other financial information, earnings guidance and presentations provided to analysts, rating agencies and the public;

c) such other periodic disclosure documents as requested by regulators or that may be required by law;

d) investments and transactions brought to the Committee's attention that could adversely affect the Bank's well-being;

e) prospectuses relating to the issuance of securities of the Bank;

f) representations provided by management to the auditors, where appropriate;

g) reports on any litigation matters which could significantly affect the Bank's financial statements;

h) reports from the chief compliance officer (the "CCO") on regulatory compliance matters, including the Bank's anti-money laundering program; and

i) other reports as required to be communicated by the auditors by the Canadian Public Accountability Board, the Office of the Superintendent of Financial Institutions, and the U.S. Public Company Accounting Oversight Board.

Moreover, the Committee will ensure that adequate procedures are in place for the review of the Bank's public disclosure of financial information derived from the Bank's financial statements, and will periodically assess the adequacy of these procedures.

**3. External Auditor**

Subject to the shareholders' powers conferred by the *Bank Act*, the Committee will recommend the appointment (or revocation thereof) of any registered public accounting firm (including the external auditor) engaged to prepare or issue an audit report or to perform other audit, review or attest services. The Committee will fix the remuneration and oversee the work of these accounting firms, including the resolution of disagreements with management regarding financial reporting. Such accounting firms will report directly to the Committee.

Moreover, as part of its oversight of the external auditor the Committee will:

a) meet with the external auditor to review and discuss the annual audit plan, the results of the audit, the auditor's report with respect to the annual statement, and all other reports, returns and transactions as required by applicable laws;

b) approve all audit engagement fees and terms, as well as the terms of any permitted non-audit services to be provided by the external auditor to the Bank, with such approvals to be given specifically or pursuant to preapproval policies and procedures adopted by the Committee in accordance with applicable laws;

c) review any concerns that may be brought forward by the external auditor, including any difficulties they may encounter in conducting their audit, as well as management's response to such concerns;

d) review material correspondence between the external auditor and management relating to audit findings;

e) taking into account the opinions of management and the Bank's internal auditor, annually assess the external auditor's qualifications and performance, including relevant experience, geographical reach, professional scepticism, quality of services and communications, and independence and objectivity;

f) review formal written statements delineating all relationships between the external auditor and the Bank that may impact its independence and objectivity;

g) annually assess the risk of the external auditor withdrawing from the audit;

h) discuss with the external auditor and with management the annual audited financial statements and quarterly financial statements, as well as related management's discussion and analysis;

i) review hiring policies concerning partners, employees and former partners and employees of the present and former external auditors;

j) review and evaluate the qualifications, performance and independence of the external auditor's lead partner and discuss the timing and process for implementing the rotation of the lead audit partner, the concurring audit partners and any other active audit engagement team partner; and

k) at least annually, obtain and review a report by the external auditor describing: (i) the external auditor's internal quality-control procedures; and (ii) any material issues raised by the most recent internal quality-control review or peer review of the external auditors, or by any inquiry or investigation by governmental or professional authorities, within the preceding five years, respecting one or more independent audits carried out by the external auditor, and any steps taken to deal with any such issues.

**4. Oversight of Independent Control Functions**

The Committee will oversee the finance, compliance and internal audit functions, having regard to their independence from the businesses whose activities they review. The Committee will review and approve the appointment (or removal) of each of the chief financial officer (the "CFO"), the CCO, and the chief internal auditor (the "CIA"), as well as their respective mandates and the mandates or charters of their respective functions. The Committee will approve each of the functions' organizational structures, budgets and resources. Every year the Committee will assess the effectiveness of each of the CFO, CCO and CIA and their respective functions. It will also periodically review independent assessments of each of these functions. Moreover, it will annually review and approve the internal audit function's overall risk methodology.

**5. Internal Control**

The Committee will assist in the oversight of internal control by engaging in the following activities:

a) requiring management to implement and maintain appropriate systems of internal control, including internal controls over financial reporting and for the prevention and detection of fraud and error;

b) evaluating and approving systems of internal control and meeting regularly with the CIA and with management to assess the adequacy and effectiveness of these systems;

c) receiving reasonable assurances on a regular basis from management that the organization is in control;

d) reviewing reports from the Chief Executive Officer (the "CEO") and the CFO regarding any significant deficiency or material weakness in the design or operation of internal controls over financial reporting and the detection of fraud involving management or other employees who have a significant role in the Bank's internal control over financial reporting;

e) reviewing and approving the Bank's disclosure policy and reviewing reports on the effectiveness of the Bank's disclosure controls and procedures; and

f) reviewing the process relating to the CEO and CFO's certifications on the design and effectiveness of the Bank's disclosure controls and procedures and internal control over financial reporting, and the integrity of the Bank's quarterly and annual financial statements.

**6. Internal Auditor**

The Committee will regularly meet with the CIA to review and approve the annual internal audit plan and review internal audit activities. The Committee will review and discuss with the CIA issues reported to management by the internal audit function and management's responses and/or corrective actions. The Committee will also evaluate the status of identified control weaknesses, as well as the adequacy and degree of compliance with the Bank's systems of internal control. Other issues that the Committee may review with the CIA include audit scope, information access, resource limitations or any other difficulties encountered by the internal audit function.

**7. Capital Management**

The Committee will review capital transactions and may designate and authorize the issue of (i) First Preferred Shares and (ii) securities qualifying as additional Tier 1 capital under capital adequacy guidelines issued by the Superintendent of Financial Institutions. The Committee may also review and approve securities disclosure documents in connection with issues of the Bank's subordinated indebtedness as provided in the relevant resolution of the Board.

The Committee will review the adequacy and effectiveness of internal controls related to capital management. It will also discuss with the external auditors any matters arising from the audit that may have an impact on regulatory or capital disclosures included in the Bank's annual statement.

**8. Committee Reports**

The Committee is responsible for preparing any report from the Committee that may be included in the Bank's annual proxy statement.

**9. Other**

a) The Committee will discuss major issues regarding accounting principles and financial statement presentations, including significant changes in the Bank's selection or application of accounting principles and analyses prepared by management or the external auditors regarding financial reporting issues and judgments made in connection with the preparation of the financial statements;

b) The Committee will establish procedures for managing complaints received by the Bank regarding accounting or auditing matters, as well as procedures for the confidential and anonymous submission by employees of concerns regarding accounting or auditing matters. The Committee will receive reports from the Ombudsman at each Committee meeting and will meet with the Ombudsman annually in relation to these procedures;

c) The Committee will establish and monitor procedures to provide disclosure of information to customers and for dealing with customer complaints as required by the *Bank Act*;

d) The Committee will review and discuss any reports concerning material violations submitted to it by the Bank's legal counsel pursuant to applicable law and policy;

e) The Committee will discuss the major financial risk exposures of the Bank and the steps management has taken to monitor and control such exposures; and

f) Subject to the laws applicable to the subsidiary, the Committee may perform for and on behalf of a subsidiary the functions of an audit committee of the subsidiary.

## B. COMMITTEE COMPOSITION AND PROCEDURES

### 1. Composition of Committee

The Committee will be composed of five or more directors. No Committee member may be an officer or employee of the Bank or of an affiliate of the Bank. Each Committee member will be (i) unaffiliated, as determined in accordance with the regulations made under the *Bank Act*, and (ii) independent, as determined by director independence standards adopted by the Board. Committee membership will reflect a balance of experience and expertise required to fulfill the Committee's mandate.

All Committee members will be financially literate or become financially literate within a reasonable period after appointment to the Committee. At least one member will have accounting or financial management expertise. No member may serve on the audit committees of more than two other public companies, unless the Board determines such simultaneous service would not impair the member's ability to serve effectively on the Committee.

### 2. Appointment of Committee Members

The Board will appoint or reappoint the Committee members at the annual organizational meeting of the directors. In the normal course members will serve a minimum of three years. Each member will remain a member until a successor is appointed, unless the member resigns, is removed or ceases to be a director. The Board may fill a vacancy that occurs in the Committee at any time.

### 3. Committee Chair and Secretary

The Board will appoint or reappoint a Committee Chair from among the members of the Committee. If the Board fails to do so, the Committee members will make the appointment or re-appointment. In the normal course the Committee Chair will serve a minimum of three years. The Committee Chair will not be a former employee of the Bank or of an affiliate. The Secretary of the Committee need not be a director.

### 4. Time and Place of Meetings

Meetings may be called by any Committee member, the external auditors or the CFO. The Committee members will determine the time and place of and the procedure at meetings, provided that the Committee meets at least quarterly. The Committee may request any officer or employee of the Bank or the Bank's outside counsel or external auditors to attend a meeting of the Committee or to meet with any members of, or consultants to, the Committee.

### 5. Quorum

A quorum for meetings will be three members.

### 6. Notice of Meetings

Notice of the time and place of each meeting will be generally given in writing or by telephone, or by electronic or other communications facilities to each Committee member and to the external auditors at least 24 hours prior to the time fixed for such meeting; however,

a) a member may in any manner waive notice of a meeting and attendance of a member at a meeting is a waiver of notice of the meeting, except where a member attends a meeting for the express purpose of objecting to the transaction of any business on the grounds that the meeting is not lawfully called; and

b) a resolution in writing signed by all the members entitled to vote on that resolution at a Committee meeting, other than a resolution of the Committee carrying out its duties under subsection 194(3) of the *Bank Act*, will be as valid as if it had been passed at a meeting of the Committee.

c) capital transactions may be reviewed and/or authorized at a meeting of which at least one hour prior notice is given;

**7. Reporting to the Board**

The Committee will report to the Board following each meeting with respect to its activities and recommendations. It will also report to the Board on the annual statement and returns that must be approved by the directors under the *Bank Act*.

**8. Access to Management and External Advisors**

In fulfilling its responsibilities, the Committee will have unrestricted access to management and employees of the Bank. The Committee will select, retain, oversee, terminate and approve the fees of any external advisor that the Committee deems necessary, including any legal or accounting advisor, to assist it in fulfilling its responsibilities. The Bank will provide appropriate funding, as determined by the Committee, for any such engagement.

The Committee may also investigate any matter with full access to all books, records, facilities, management and employees of the Bank.

**9. Private Meetings**

At least quarterly the Committee will meet with no members of management present and have separate private meetings with the external auditors, and each of the CIA, the CFO and the CCO, to discuss any matters that the Committee or these parties believe should be discussed.

**10. Evaluation of Effectiveness and Review of Mandate**

The Committee will annually review and assess the adequacy of its mandate and evaluate its effectiveness in fulfilling its mandate.

## APPENDIX D – PRE-APPROVAL POLICIES AND PROCEDURES

**Policies and Procedures**
**for the Monitoring, and Pre-Approval of Services**
**to be Performed by Public Accounting Firms**
**and the Review of the External Auditors**
**(effective October 16, 2014)**

**Mandate**

1. The mandate of the Audit Committee established by the Board of Directors ("Board") confers on the Committee the authority and responsibility (among other things) to;
   - Pre-approve all audit and any legally permissible non-audit services to be provided by the external auditors and all audit, review and attest services provided by any other public accounting firm, with such approval to be given either specifically or pursuant to pre-approval policies and procedures adopted by the Committee; and
   - To complete an annual and five year comprehensive reviews of the external auditor's performance and to recommend to the Board the selection and termination of the external auditor subject to shareholder approval.

**Purpose**

2. These Policies and Procedures are intended to:
   a) specify the methods by which the Audit Committee may pre-approve the provision of audit, review and attest services by any public accounting firm to the Bank and its subsidiaries;
   b) specify the methods by which the Audit Committee may pre-approve the provision of non-audit services to the Bank and its subsidiaries by the Bank's external auditors and their affiliates (the "auditors") that do not impair the independence of the auditors under applicable laws and professional standards, including the rules of the Canadian Institute of Chartered Accountants, the Public Company Accounting Oversight Board ("PCAOB"), the Canadian Securities Administrators and the U.S. Securities and Exchange Commission;
   c) set forth procedures designed to ensure that any services to be provided by the auditors and that any audit, review or attestation services to be performed by any other public accounting firm have been properly authorized and pre-approved under the authority of the Audit Committee, and that the Committee is promptly informed of each service;
   d) ensure that the Audit Committee's responsibilities are not delegated to management in violation of applicable law;
   e) specify the policies relating to the annual and comprehensive evaluation of the external auditor and selection of the external auditor by the Audit Committee for recommendation to the Board.

**Required Approval of Audit and Non-Audit Services**

3. The Audit Committee shall pre-approve all engagements of the auditors by:
   a) the Bank; or
   b) any subsidiary.

4. The Audit Committee shall pre-approve engagements of any public accounting firm to provide audit, review or attest services to:
   a) the Bank; or
   b) any subsidiary.

5. The Audit Committee shall evidence its pre-approval by resolution of the Committee or through the exercise of delegated authority in accordance with these Policies and Procedures.

6. "Subsidiary" has the meaning set forth in Rule 1-02(x) of the U.S. Securities and Exchange Commission's Regulation S-X.

7. For the purpose of these Policies and Procedures and any pre-approval:

   a) “Audit services” include services that are a necessary part of the audit process and any activity that is a necessary procedure used by the accountant in reaching opinions on the financial statements and on internal control over financial reporting as is required under applicable auditing standards (“AAS”), including technical reviews to reach an audit judgment on complex accounting issues;

   b) The term “audit services” is broader than those services strictly required to perform an audit pursuant to AAS and include such services as:
      i) the issuance of comfort letters and consents in connection with offerings of securities;
      ii) the performance of domestic and foreign statutory audits;
      iii) attest services required by statute or regulation; and
      iv) assistance with and review of documents filed with the Office of the Superintendent of Financial Institutions, Canadian Securities Administrators, the Securities and Exchange Commission, the Board of Governors of the Federal Reserve Board and other regulators having jurisdiction over the activities of the Bank and its subsidiaries, and responding to comments from such regulators;

   c) “Audit-related” services are assurance and related services traditionally performed by the principal accountant and that are reasonably related to the performance of the audit or review of financial statements and not categorized under “audit fees” for disclosure purposes.

      “Audit-related services” include:
      i) employee benefit plan audits, including audits of employee pension plans,
      ii) due diligence related to mergers and acquisitions,
      iii) consultations and audits in connection with acquisitions, including evaluating the accounting treatment for proposed transactions;
      iv) internal control reviews;
      v) attest services not required by statute or regulation; and
      vi) consultations regarding financial accounting and reporting standards.

      Non-financial operational audits are not “audit-related” services;

   d) “Review services” are services applied to unaudited financial statements and consist of the inquiry and analytical procedures that provide the accountant with a reasonable basis for expressing limited assurance that there are no material modifications that should be made to financial statements for them to be in conformity with International Financial Reporting Standards or, if applicable, any other comprehensive basis of accounting;

   e) “Attest” services are those engagements where the accountant issues an examination, a review, or an agreed-upon procedures report on a subject matter, or an assertion about the subject matter that is the responsibility of another party. Examples of the subject matter of an “attest” engagement include: examinations (i.e., audits) of financial forecasts and projections; reviews of pro-forma financial information; reporting on a company’s internal control over financial reporting; and examinations of compliance with contractual arrangements or laws and regulations.

**External Auditor Selection and Appointment**

8. The Audit Committee shall monitor, review and assess the quality of the external auditor on an annual basis. The annual assessment will include:

   a) quality and thoroughness of the audit approach and methodology;
   b) level of professional skepticism, and critical judgments applied by the audit team;
   c) independence of the external audit firm and the engagement partner;
   d) skills and knowledge of the audit team;
   e) level of understanding of our businesses and the financial services industry;
   f) sufficiency of resources and ability to complete the audit in a timely manner;
   g) partner rotation;
   h) value for money;
   i) quality of communications;
   j) risk of likelihood of withdrawal from the audit;
   k) input from senior management of RBC;

l) input from RBC Internal Audit Services;
m) a self assessment prepared by the auditor; and
n) audit quality metrics and other matters as determined by the Audit Committee or the Board of Directors.

9. At least every five years the Audit Committee will conduct a comprehensive assessment of the external auditor. The assessment will include:

a) considerations included within the annual assessment;
b) performance since the last comprehensive review, or appointment of the external auditor;
c) quality and continuity of the engagement team;
d) tenure of the auditor;
e) incidence of independence threats and effectiveness of applied safeguards;
f) track record of the auditor applying professional skepticism; and
g) responsiveness to changes in the Bank's businesses (i.e. significant acquisitions or changes to systems) and calls for improvement from regulators, inspectors, Audit Committees or management.

10. The Audit Committee will take the following into account in deciding whether to recommend the tendering of the external audit engagement of the Bank:

a) the results of the annual and comprehensive assessments (refer to factors described in sections 8 and 9);
b) the impact of regulatory and legislative requirements, including mandatory tendering and rotation requirements on the Bank and its subsidiaries; and
c) other factors deemed relevant by the Audit Committee or the Board.

**Delegation**

11. The Audit Committee may from time to time delegate to one or more of its members who are "independent" (within the meanings of applicable law and the rules or policies of a securities commission having jurisdiction, and the New York Stock Exchange) the power to pre-approve from time to time:

a) audit, review or attest services to be provided by any public accounting firm (including the auditors) that have not been otherwise approved by the Committee;
b) permissible non-audit services to be provided by the auditors that have not otherwise been approved by the Committee, and
c) changes in the scope of pre-approved engagements and the maximum estimated fees for engagements that have been pre-approved by the Committee.

12. The member(s) exercising such delegated authority must report at the next regularly scheduled meeting of the Audit Committee any services that were pre-approved under this delegated authority since the date of the last regularly scheduled meeting.

13. The member(s) exercising delegated authority may evidence his or her approval by signing an instrument in writing that describes the engagement with reasonable specificity, or by signing an engagement letter containing such a description.

14. In addition, member(s) exercising delegated authority may pre-approve an engagement orally, if any such oral approval is promptly confirmed in writing. Such written confirmation may be given by fax or e-mail and must describe the engagement with reasonable specificity.

**Responsibilities of External Auditors**

15. To support the independence process, the external auditors shall:

a) confirm in engagement letters that performance of the work will not impair independence;
b) satisfy the Audit Committee that they have in place comprehensive internal policies and processes to ensure adherence, world-wide, to independence requirements, including robust monitoring and communications;
c) provide communication and confirmation to the Committee on independence on a regular basis, and at least annually;
d) provide for Committee approval, in connection with each annual audit engagement, a detailed scope of services outlining each individual audit to be performed and a detailed description of audit-related services;

e) utilize the tracking numbers assigned by management to all pre-approved services in all fee billings and correspondence, provide detailed annual fee reporting and review management's detailed quarterly fee reporting.
f) communicate to the Audit Committee all matters required to be communicated by the Canadian Public Accountability Board and U.S. Public Company Accounting Oversight Board.
g) maintain certification by the Canadian Public Accountability Board and registration with the U.S. Public Company Accounting Oversight Board; and
h) review their partner rotation plan and advise the Committee on an annual basis.

**Engagements**

16. The Audit Committee will not, as a general rule, pre-approve a service more than one year prior to the time at which it is anticipated that the firm of accountants will be engaged to provide the service.

17. Engagements will not be considered to be revolving in nature and may not operate from year-to-year without reapproval.

18. All audit and non-audit services to be provided by the auditors, and all audit, review or attest services to be provided by any public accounting firm, shall be provided pursuant to an engagement letter that shall:

    a) be in writing and signed by the auditors or public accounting firm;
    b) specify the particular services to be provided;
    c) specify the period in which the services will be performed;
    d) specify the maximum total fees to be paid; and
    e) in the case of engagements of the auditors, include a confirmation by the auditors that the services are not within a category of services the provision of which would impair their independence under applicable law and Canadian and U.S. generally accepted auditing standards.

19. Management shall, before signing and delivering an engagement letter on behalf of the Bank or a subsidiary and before authorizing the commencement of an engagement:

    a) obtain an engagement letter in accordance with the foregoing;
    b) confirm that the services are described in the engagement letter accurately and with reasonable specificity;
    c) obtain confirmation from the auditors that they have conducted an analysis that supports their conclusion that performance of the services will not impair their independence;
    d) with respect to engagements for the provision of services other than audit and audit-related services, obtain confirmation from legal counsel of the Bank that performance of the services will not impair independence; and
    e) verify that the performance of the services has specifically been approved by the Audit Committee or a member in accordance with authority delegated by the Committee.

All engagement letters entered into pursuant to these Policies and Procedures shall be made available to the Audit Committee.

**Tax Services**

20. The Audit Committee, and any member in the exercise of delegated power, shall consider the provision of tax services by the auditors on an engagement-by-engagement basis.

21. The Audit Committee shall not pre-approve, and any member of the Audit Committee may not exercise delegated power to engage the auditors to provide, tax services to the Bank or a subsidiary:

    a) to represent the Bank or a subsidiary before a tax or other court;
    b) if the provision of the services would be prohibited, as prescribed by paragraph 25 of these Policies and Procedures; or
    c) related to marketing, planning or opinion in favour of the tax treatment of (1) a transaction offered under conditions of confidentiality and for which a fee has been or will be paid by the Bank; or (2) a transaction that was initially recommended directly or indirectly, by the accountant and a significant purpose of which is tax avoidance, unless the proposed tax treatment is at least more likely than not to be allowable under applicable tax laws.

22. The Audit Committee shall not pre-approve, and any member of the Audit Committee may not exercise delegated power to engage the auditors to provide, tax services to a person in a financial oversight role at the Bank, or an immediate family member of such a person, except as would be permitted by the PCAOB rules.

**Other Non-Audit Services**

23. The Audit Committee, and any member in the exercise of delegated power, shall consider the provision of other non-audit services (non-audit services other than audit-related services and tax services, and including non-audit services relating to internal control, business recovery services and due diligence or comfort letter type services legally required or customarily provided by an issuer's accountants in Europe, at the issuer's expense, pursuant to an arrangement letter between an accountant, the issuer and a lender or investment bank) by the auditors on an engagement-by-engagement basis. Any approval of non-audit services relating to internal control must be preceded by a discussion with the auditors of the potential effects of the services on independence as required by the rules of the PCAOB.

**Value-Added Services**

24. The Audit Committee recognizes and approves of the fact that the auditors from time to time provide, without charge or commitment, value added services to the Bank and its subsidiaries that do not involve an engagement of the auditors. Such value added services may include surveys, educational sessions, workshops, roundtable meetings with peers, benchmarking studies, and monitoring of contest draws as an independent observer. The Audit Committee receives and reviews periodic reports from management and the auditors providing representative examples of such services as part of its monitoring of the Bank's overall relationship with the auditors.

**Prohibited Services**

25. The Audit Committee shall not pre-approve, and any member may not exercise delegated power to engage the auditors to provide, any services, including tax services or business recovery services, that (i) provide for a contingency or commission fee arrangement; or (ii) involve the auditors performing any of the non-audit services set forth in paragraph (c)(4) of Rule 2-01 of the U.S. Securities and Exchange Commission's Regulation S-X, which include:

    a. providing bookkeeping or other services related to the accounting records or financial statements of the Bank or any of its subsidiaries,
    b. providing financial information systems design and implementation to the Bank or any of its subsidiaries,
    c. providing actuarial services to the Bank or any of its subsidiaries,
    d. providing internal audit outsourcing services to the Bank or any of its subsidiaries,
    e. providing human resources services to the Bank or any of its subsidiaries,
    f. providing broker-dealer, investment adviser, or investment banking services to the Bank or any of its subsidiaries,
    g. functioning in the role of management for the Bank or any of its subsidiaries,
    h. auditing their own work in relation to the Bank or any of its subsidiaries,
    i. providing appraisal or valuation services, contribution in kind reports or fairness opinions to the Bank or any of its subsidiaries,
    j. serving in an advocacy role for the Bank or any of its subsidiaries,
    k. providing legal services to the Bank or any of its subsidiaries,
    l. providing services that fall within the category of "expert" services that are prohibited by applicable law to the Bank or any of its subsidiaries, or
    m. providing services to the Bank or any of its subsidiaries that would otherwise compromise their independence under applicable regulatory guidance.

For the purposes of the Prohibited Services listed in this Section 25 above, a "subsidiary" includes any entity for which the Bank uses the equity method of accounting and where it is material to the Bank. Therefore, the Audit Committee is not permitted to pre-approve the provision of the prohibited services listed above by the auditors to these entities.

**Timely Reporting to the Audit Committee**

26. Management shall provide a quarterly written report to the Audit Committee of services performed and related fees, at the scheduled meeting of the Committee held following the end of each fiscal quarter end.

**No Delegation to Management**

27. Nothing in these Policies and Procedures shall be interpreted as a delegation to management of the Audit Committee's responsibilities in violation of applicable law.

**Effective Date**

28. These updated Policies and Procedures are effective as and from October 16, 2014.

**Disclosure**

29. The Bank shall disclose these Policies and Procedures in its periodic filings, as required by applicable law.

**Review**

30. The Audit Committee shall review and reassess the adequacy of these Policies and Procedures on a bi-annual basis.

# Management's Discussion and Analysis

Management's Discussion and Analysis (MD&A) is provided to enable a reader to assess our results of operations and financial condition for the fiscal year ended October 31, 2015, compared to the preceding two fiscal years. This MD&A should be read in conjunction with our 2015 Annual Consolidated Financial Statements and related notes and is dated December 1, 2015. All amounts are in Canadian dollars, unless otherwise specified, and are based on financial statements prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB), unless otherwise noted.

Additional information about us, including our 2015 Annual Information Form, is available free of charge on our website at rbc.com/investorrelations, on the Canadian Securities Administrators' website at sedar.com and on the EDGAR section of the United States (U.S.) Securities and Exchange Commission's (SEC) website at sec.gov.

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*See our Glossary for definitions of terms used throughout this document*

## Caution regarding forward-looking statements

From time to time, we make written or oral forward-looking statements within the meaning of certain securities laws, including the "safe harbour" provisions of the *United States Private Securities Litigation Reform Act of 1995* and any applicable Canadian securities legislation. We may make forward-looking statements in this 2015 Annual Report, in other filings with Canadian regulators or the SEC, in other reports to shareholders and in other communications. Forward-looking statements in this document include, but are not limited to, statements relating to our financial performance objectives, vision and strategic goals, the economic and market review and outlook for Canadian, U.S., European and global economies, the regulatory environment in which we operate, the outlook and priorities for each of our business segments, and the risk environment including our liquidity and funding risk. The forward-looking information contained in this document is presented for the purpose of assisting the holders of our securities and financial analysts in understanding our financial position and results of operations as at and for the periods ended on the dates presented and our financial performance objectives, vision and strategic goals, and may not be appropriate for other purposes. Forward-looking statements are typically identified by words such as "believe", "expect", "foresee", "forecast", "anticipate", "intend", "estimate", "goal", "plan" and "project" and similar expressions of future or conditional verbs such as "will", "may", "should", "could" or "would".

By their very nature, forward-looking statements require us to make assumptions and are subject to inherent risks and uncertainties, which give rise to the possibility that our predictions, forecasts, projections, expectations or conclusions will not prove to be accurate, that our assumptions may not be correct and that our financial performance objectives, vision and strategic goals will not be achieved. We caution readers not to place undue reliance on these statements as a number of risk factors could cause our actual results to differ materially from the expectations expressed in such forward-looking statements. These factors – many of which are beyond our control and the effects of which can be difficult to predict – include: credit, market, liquidity and funding, insurance, operational, regulatory compliance, strategic, reputation, legal and regulatory environment, competitive and systemic risks and other risks discussed in the Risk management and Overview of other risks sections; weak oil and gas prices; the high levels of Canadian household debt; exposure to more volatile sectors; cybersecurity; anti-money laundering; the business and economic conditions in Canada, the U.S. and certain other countries in which we operate; the effects of changes in government fiscal, monetary and other policies; tax risk and transparency; and environmental risk.

We caution that the foregoing list of risk factors is not exhaustive and other factors could also adversely affect our results. When relying on our forward-looking statements to make decisions with respect to us, investors and others should carefully consider the foregoing factors and other uncertainties and potential events. Material economic assumptions underlying the forward-looking statements contained in this 2015 Annual Report are set out in the Overview and outlook section and for each business segment under the heading Outlook and priorities. Except as required by law, we do not undertake to update any forward-looking statement, whether written or oral, that may be made from time to time by us or on our behalf.

Additional information about these and other factors can be found in the Risk management and Overview of other risks sections.

Information contained in or otherwise accessible through the websites mentioned does not form part of this report. All references in this report to websites are inactive textual references and are for your information only.

## Selected financial and other highlights

Table 1

| (Millions of Canadian dollars, except per share, number of and percentage amounts) | 2015 | 2014 | 2013 | 2015 vs. 2014 Increase (decrease) | |
|---|---|---|---|---|---|
| Total revenue | $ 35,321 | $ 34,108 | $ 30,682 | $ 1,213 | 3.6% |
| Provision for credit losses (PCL) | 1,097 | 1,164 | 1,237 | (67) | (5.8)% |
| Insurance policyholder benefits, claims and acquisition expense (PBCAE) | 2,963 | 3,573 | 2,784 | (610) | (17.1)% |
| Non-interest expense | 18,638 | 17,661 | 16,214 | 977 | 5.5% |
| Net income before income taxes | 12,623 | 11,710 | 10,447 | 913 | 7.8% |
| **Net income** | $ 10,026 | $ 9,004 | $ 8,342 | $ 1,022 | 11.4% |
| **Segments – net income** | | | | | |
| Personal & Commercial Banking | $ 5,006 | $ 4,475 | $ 4,380 | $ 531 | 11.9% |
| Wealth Management | 1,041 | 1,083 | 886 | (42) | (3.9)% |
| Insurance | 706 | 781 | 595 | (75) | (9.6)% |
| Investor & Treasury Services | 556 | 441 | 339 | 115 | 26.1% |
| Capital Markets | 2,319 | 2,055 | 1,700 | 264 | 12.8% |
| Corporate Support | 398 | 169 | 442 | 229 | 135.5% |
| **Net income** | $ 10,026 | $ 9,004 | $ 8,342 | $ 1,022 | 11.4% |
| **Selected information** | | | | | |
| Earnings per share (EPS) – basic | $ 6.75 | $ 6.03 | $ 5.53 | $ 0.72 | 11.9% |
| – diluted | 6.73 | 6.00 | 5.49 | 0.73 | 12.2% |
| Return on common equity (ROE) (1), (2) | 18.6% | 19.0% | 19.7% | n.m. | (40) bps |
| PCL on impaired loans as a % of average net loans and acceptances | 0.24% | 0.27% | 0.31% | n.m. | (3) bps |
| Gross impaired loans (GIL) as a % of loans and acceptances | 0.47% | 0.44% | 0.52% | n.m. | 3 bps |
| Liquidity coverage ratio (3) | 127% | n.a. | n.a. | n.a. | n.a. |
| **Capital ratios, Leverage ratio and multiples** (4) | | | | | |
| Common Equity Tier 1 (CET1) ratio (4) | 10.6% | 9.9% | 9.6% | n.m. | 70 bps |
| Tier 1 capital ratio (4) | 12.2% | 11.4% | 11.7% | n.m. | 80 bps |
| Total capital ratio (4) | 14.0% | 13.4% | 14.0% | n.m. | 60 bps |
| Assets-to-capital multiple (4) | n.a. | 17.0X | 16.6X | n.a. | n.a. |
| Leverage ratio (4) | 4.3% | n.a. | n.a. | n.a. | n.a. |
| **Selected balance sheet and other information** | | | | | |
| Total assets | $ 1,074,208 | $ 940,550 | $ 859,745 | $ 133,658 | 14.2% |
| Securities | 215,508 | 199,148 | 182,710 | 16,360 | 8.2% |
| Loans (net of allowance for loan losses) | 472,223 | 435,229 | 408,850 | 36,994 | 8.5% |
| Derivative related assets | 105,626 | 87,402 | 74,822 | 18,224 | 20.9% |
| Deposits | 697,227 | 614,100 | 563,079 | 83,127 | 13.5% |
| Common equity | 57,048 | 48,615 | 43,064 | 8,433 | 17.3% |
| Average common equity (1) | 52,300 | 45,700 | 40,600 | 6,600 | 14.4% |
| Total capital risk-weighted assets | 413,957 | 372,050 | 318,981 | 41,907 | 11.3% |
| Assets under management (AUM) (5) | 498,400 | 457,000 | 391,100 | 41,400 | 9.1% |
| Assets under administration (AUA) (5), (6) | 4,609,100 | 4,647,000 | 4,050,900 | (37,900) | (0.8)% |
| **Common share information** | | | | | |
| Shares outstanding (000s) – average basic | 1,442,935 | 1,442,553 | 1,443,735 | 382 | 0.0% |
| – average diluted | 1,449,509 | 1,452,003 | 1,466,529 | (2,494) | (0.2)% |
| – end of period | 1,443,423 | 1,442,233 | 1,441,056 | 1,190 | 0.1% |
| Dividends declared per common share | $ 3.08 | $ 2.84 | $ 2.53 | $ 0.24 | 8.5% |
| Dividend yield (7) | 4.1% | 3.8% | 4.0% | n.m. | 30 bps |
| Common share price (RY on TSX) (8) | $ 74.77 | $ 80.01 | $ 70.02 | $ (5.24) | (6.5)% |
| Market capitalization (TSX) (8) | 107,925 | 115,393 | 100,903 | (7,468) | (6.5)% |
| **Business information** (number of) | | | | | |
| Employees (full-time equivalent) (FTE) | 72,839 | 73,498 | 74,247 | (659) | (0.9)% |
| Bank branches | 1,355 | 1,366 | 1,372 | (11) | (0.8)% |
| Automated teller machines (ATMs) | 4,816 | 4,929 | 4,973 | (113) | (2.3)% |
| Period average US$ equivalent of C$1.00 (9) | $ 0.797 | $ 0.914 | $ 0.977 | $ (0.117) | (12.8)% |
| Period-end US$ equivalent of C$1.00 | $ 0.765 | $ 0.887 | $ 0.959 | $ (0.122) | (13.8)% |

(1) Average amounts are calculated using methods intended to approximate the average of the daily balances for the period. This includes ROE and Average common equity. For further details, refer to the Key performance and non-GAAP measures section.
(2) These measures may not have a standardized meaning under generally accepted accounting principles (GAAP) and may not be comparable to similar measures disclosed by other financial institutions. For further details, refer to the Key performance and non-GAAP measures section.
(3) Liquidity coverage ratio (LCR) is a new regulatory measure under the Basel III Framework, and is calculated using the Liquidity Adequacy Requirements (LAR) guideline. Effective in the second quarter of 2015, LCR was adopted prospectively, and is not applicable (n.a.) for prior periods. For further details, refer to the Liquidity and funding risk section.
(4) Capital and Leverage ratios presented above are on an "all-in" basis. The Leverage ratio is a regulatory measure under the Basel III framework effective the first quarter of 2015. The Leverage ratio has replaced the Assets-to-capital multiple (ACM), and is n.a. for prior periods. The ACM is presented on a transitional basis for prior periods. For further details, refer to the Capital management section.
(5) Represents period-end spot balances.
(6) AUA includes $21.0 billion and $8.0 billion (2014 – $23.2 billion and $8.0 billion; 2013 – $25.4 billion and $7.2 billion) of securitized residential mortgages and credit card loans, respectively.
(7) Defined as dividends per common share divided by the average of the high and low share price in the relevant period.
(8) Based on TSX closing market price at period-end.
(9) Average amounts are calculated using month-end spot rates for the period.
n.m. not meaningful

## About Royal Bank of Canada

Royal Bank of Canada (RY on TSX and NYSE) is Canada's largest bank, and one of the largest banks in the world, based on market capitalization. We are one of North America's leading diversified financial services companies, and provide personal and commercial banking, wealth management services, insurance, investor services and capital markets products and services on a global basis. We employ approximately 78,000 full- and part-time employees who serve more than 16 million personal, business, public sector and institutional clients through offices in Canada, the U.S. and 37 other countries. For more information, please visit rbc.com.

Our business segments are described below.

**Personal & Commercial Banking** operates in Canada, the Caribbean and the U.S., and comprises our personal and business banking operations, as well as our auto financing and retail investment businesses.

**Wealth Management** serves affluent, high net worth and ultra-high net worth clients from our offices in key financial centres mainly in Canada, the U.S., the U.K., Channel Islands, and Asia with a comprehensive suite of investment, trust, banking, credit and other wealth management solutions. We also provide asset management products and services directly to institutional and individual clients through our distribution channels and third-party distributors.

**Insurance** provides a wide range of life, health, home, auto, travel, wealth, group and reinsurance products and solutions. In Canada, we offer insurance products and services through our proprietary distribution channels, comprised of the field sales force which includes retail insurance branches, our field sales representatives, advice centres and online, as well as through independent insurance advisors and affinity relationships. Outside Canada, we operate in reinsurance markets globally offering life, accident and annuity reinsurance products.

**Investor & Treasury Services** serves the needs of institutional investing clients by providing asset servicing, custodial, advisory, financing and other services to safeguard assets, maximize liquidity and manage risk in multiple jurisdictions around the world. We also provide short-term funding and liquidity management for RBC.

**Capital Markets** provides public and private companies, institutional investors, governments and central banks with a wide range of products and services. In North America, we offer a full suite of products and services which include corporate and investment banking, equity and debt origination and distribution, and structuring and trading. Outside North America, we offer a diversified set of capabilities in our key sectors of expertise such as energy, mining and infrastructure, and we have expanded into industrial, consumer and health care in Europe.

Our business segments are supported by Corporate Support, which consists of Technology & Operations and Functions. Technology & Operations provides the technological and operational foundation required to effectively deliver products and services to our clients, while Functions includes our finance, human resources, risk management, internal audit and other functional groups.

The following chart presents our business segments and respective lines of business:

**ROYAL BANK OF CANADA**

| Personal & Commercial Banking | Wealth Management | Insurance | Investor & Treasury Services | Capital Markets |
|---|---|---|---|---|
| Canadian Banking | Canadian Wealth Management | Canadian Insurance | | Corporate and Investment Banking |
| Caribbean & U.S. Banking | U.S. & International Wealth Management | International Insurance | | Global Markets |
| | Global Asset Management | | | Other |

**Corporate Support**

Technology & Operations | Functions

## Vision and strategic goals

Our business strategies and actions are guided by our vision, **"To be among the world's most trusted and successful financial institutions."** Our three strategic goals are:

- In Canada, to be the undisputed leader in financial services;
- In the U.S., to be the preferred partner to corporate, institutional and high net worth clients and their businesses; and
- In select global financial centres, to be a leading financial services partner valued for our expertise.

For our progress in 2015 against our business strategies and strategic goals, refer to the Business segment results section.

## Economic and market review and outlook – data as at December 1, 2015

The predictions and forecasts in this section are based on information and assumptions from sources we consider reliable. If this information or these assumptions are not accurate, actual economic outcomes may differ materially from the outlook presented in this section. For details on risk factors from general business and economic conditions that may affect our business and financial results, refer to the Overview of other risks section.

**Canada**

The Canadian economy is expected to grow at an estimated rate of 1.2% during calendar 2015, which is below our estimate of 2.7% as at December 2, 2014 and slightly above our estimate of 1.0% as at August 25, 2015. The first half of the calendar year was impacted by weak investment by the energy sector and slow export activity. Energy production started to recover in the second half of the calendar year, while an increase in manufacturing output combined with stronger U.S. economic growth and a weak Canadian dollar drove exports higher. Housing market activity remained solid through most of calendar 2015, despite a slowdown in oil industry-sensitive markets. Labour markets remained

strong during most of the calendar year, although the unemployment rate rose slightly to 7.0% in October 2015 as growth in the labour force outpaced the increase in employment. The Canadian dollar declined in value against the U.S. dollar for most of the calendar year, and reached an 11-year low in September 2015, mostly due to market expectations of a further divergence in monetary policy between the two countries and given the sustained downturn in oil prices. The Bank of Canada (BoC) reduced its overnight rate twice during the calendar year, by 25 bps each time in January 2015 and July 2015, to 0.50%, as lower growth than expected resulted in an increase in excess capacity and created downward risks to the inflation outlook.

In calendar 2016, we expect the Canadian economy to grow at an estimated rate of 2.2%, driven by firm consumer spending and solid net exports. We expect housing market activity to soften slightly in calendar 2016, as increased pressure on affordability in some key markets softens demand. As the pace of economic growth picks up, we expect the core inflation rate to hold above the BoC's target of 2.0%, leading the BoC to reverse the interest rate cuts made in 2015 beginning in the fourth calendar quarter of 2016.

**U.S.**

The U.S. economy is expected to grow at an estimated rate of 2.5% in calendar 2015, which is below our estimate of 3.3% as at December 2, 2014, and slightly above our estimate of 2.4% as at August 25, 2015. Strong consumer spending, solid housing market activity and modest business investment during the calendar year more than offset the dampening impact of poor weather conditions and a ports strike in the first calendar quarter. Labour markets generally improved during the year, with the unemployment rate at 5.0% in October 2015, which is within the range considered full employment by the Federal Reserve (Fed). Despite this improvement in the labour markets and solid consumer spending, the Fed cited concerns about global developments as well as the low level of inflation at its September 2015 meeting, and maintained its cautious policy stance by holding its funds target range at historically low levels.

In calendar 2016, we expect the U.S. economy to grow at an estimated rate of 2.8%, reflecting continuing firm consumer spending and housing market activity, as well as stronger business investment. Given that global financial markets displayed greater stability in the beginning of the fourth calendar quarter of 2015 compared to the previous calendar quarter, and the U.S. labour market continued to firm, we expect the Fed to begin to raise its key interest rate from the current funds target range of 0.0% to 0.25%, in December 2015.

**Europe**

The Euro area economy is expected to grow at an estimated rate of 1.5% in calendar 2015, which is above both our estimates of 1.0% as at December 2, 2014 and 1.4% as at August 25, 2015, largely due to the effects of the stimulative monetary policy adopted by the European Central Bank (ECB), and lower oil prices leading to higher consumer spending. The unemployment rate improved to its lowest level since January 2012 and was 10.8% in September 2015 compared to 11.1% in June 2015. The Euro area inflation rate remained below the ECB's target levels for most of the calendar year, and was 0.0% in October 2015, as the decline in energy prices offset increases in price levels in other sectors. The ECB launched its monthly asset purchase program, the Public Sector Purchase Program (PSPP), in March 2015 and committed to monthly purchases of €60 billion of a combination of euro-denominated public sector securities, asset-backed securities, and covered bonds.

In calendar 2016, we expect the Euro area economy to grow at an estimated rate of 1.7%, as the economy benefits from the stimulus undertaken by the ECB, a weaker Euro, and lower oil prices. As a result of increased concerns about headwinds from the global economy and to negate a modest tightening in financial conditions, we expect the ECB to further reduce its deposit rate to (0.4)% from (0.2)%, and to extend the PSPP past its initial September 2016 commitment.

**Financial markets**

Equity markets in Canada and the U.S. remained volatile throughout our fiscal year, largely related to the effect of low global oil prices, diverging monetary policies amongst global central banks, and a decline in Chinese equity markets. Yields on both Canadian and U.S. long-term government bonds fluctuated during the fiscal year. Credit spreads on corporate bonds in North America generally widened through the fiscal year, before tightening slightly at the end of October 2015. Crude oil prices generally remained low throughout the fiscal year, and reached a 10-year low in August 2015. Prices for non-precious metals declined for most of the fiscal year due to a combination of strong supply and weak demand from emerging economies including China.

**Regulatory environment**

We continue to monitor and prepare for regulatory developments in a manner that seeks to ensure compliance with new requirements while mitigating any adverse business or economic impacts. Such impacts could result from new or amended regulations and the expectations of those who enforce them. Significant developments include continuing changes to global and domestic standards for capital and liquidity, over-the-counter (OTC) derivatives reform, initiatives to enhance requirements for institutions deemed systemically important to the financial sector, and changes to resolution regimes addressing government bail-in and total loss-absorbing capacity. We also continue to implement reforms enacted under the U.S. *Dodd-Frank Wall Street Reform and Consumer Protection Act* including those related to the Volcker Rule and the Fed's enhanced prudential standards for Bank Holding Companies and Foreign Banking Organizations.

For a discussion on risk factors resulting from these and other regulatory developments which may affect our business and financial results, refer to the Risk management – Top and emerging risks section. For further details on our framework and activities to manage risks, refer to the Risk management and Capital management sections.

## Defining and measuring success through Total Shareholder Returns

Our focus is to maximize total shareholder returns (TSR) through the achievement of top half performance compared to our global peer group over the medium term (3-5 years), which we believe reflects a longer-term view of strong and consistent financial performance.

Maximizing TSR is aligned with our three strategic goals discussed earlier and we believe represents the most appropriate measure of shareholder value creation. TSR is a concept used to compare the performance of our common shares over a period of time, reflecting share price appreciation and dividends paid to common shareholders. The absolute size of the TSR will vary depending on market conditions, and the relative position reflects the market's perception of our overall performance relative to our peers over a period of time.

Financial performance objectives are used to measure progress against our medium-term TSR objectives. We review and revise these financial performance objectives as economic, market and regulatory environments change. By focusing on our medium-term objectives in our decision-making, we believe we will be well positioned to provide sustainable earnings growth and solid returns to our common shareholders.

We achieved all our performance objectives in 2015. The following table provides a summary of our performance against our financial performance objectives in 2015:

**2015 Financial performance compared to our medium-term objectives** — Table 2

| | 2015 results | Achieved |
|---|---|---|
| Diluted EPS growth of 7% + | **12.2%** | **ü** |
| ROE of 18% + | **18.6%** | **ü** |
| Strong capital ratios (CET1) (1) | **10.6%** | **ü** |
| Dividend payout ratio 40% – 50% | **46%** | **ü** |

(1) For further details on the CET1 ratio, refer to the Capital management section.

For 2016, our medium-term financial performance objectives will remain unchanged.

We compare our TSR to that of a global peer group approved by our Board of Directors. The global peer group remains unchanged from last year and consists of the following 10 financial institutions:

- Canadian financial institutions: Bank of Montreal, Canadian Imperial Bank of Commerce, Manulife Financial Corporation, National Bank of Canada, Power Financial Corporation, The Bank of Nova Scotia, and the Toronto-Dominion Bank.
- U.S. banks: JPMorgan Chase & Co. and Wells Fargo & Company.
- International banks: Westpac Banking Corporation.

**Medium-term objectives – three and five year TSR vs. peer group average** — Table 3

| | Three year TSR (1) | Five year TSR (1) |
|---|---|---|
| Royal Bank of Canada | 14% | 11% |
| | Top half | Mid-point |
| Peer group average (excluding RBC) | 15% | 12% |

(1) The three and the five year average annual TSR are calculated based on our common share price appreciation as per the TSX closing market price plus reinvested dividends for the period October 31, 2012 to October 31, 2015 and October 31, 2010 to October 31, 2015 respectively.

**Common share and dividend information** — Table 4

| For the year ended October 31 | **2015** | 2014 | 2013 | 2012 | 2011 |
|---|---|---|---|---|---|
| Common share price (RY on TSX) – close, end of period | **$ 74.77** | $ 80.01 | $ 70.02 | $ 56.94 | $ 48.62 |
| Dividends paid per share | **3.04** | 2.76 | 2.46 | 2.22 | 2.04 |
| Increase (decrease) in share price | **(6.5)%** | 14.3% | 23.0% | 17.1% | (10.6)% |
| Total shareholder return | **(3.0)%** | 19.0% | 28.0% | 22.0% | (6.7)% |

## Key corporate events of 2015

**City National Corporation**
On November 2, 2015, we completed the acquisition of City National Corporation (City National), the holding company of City National Bank. Total consideration of US$5.5 billion was paid with US$2.6 billion in cash and 41.6 million RBC common shares. In addition, we issued RBC first preferred shares with a par value of US$275 million in exchange for all outstanding shares of City National preferred stock. For further details, refer to Notes 11 and 36 of our 2015 Annual Consolidated Financial Statements.

**Royal Bank of Canada (Suisse) SA**
On August 28, 2015, we completed the sale of Royal Bank of Canada (Suisse) SA, (RBC Suisse), to SYZ Group. As a result of the transaction, we recorded a loss on disposal of $7 million (before- and after-tax), including deal and transaction costs, in Non-interest expense – Other. For further details, refer to Note 11 of our 2015 Annual Consolidated Financial Statements.

**RBC Royal Bank (Suriname) N.V.**
On July 31, 2015, we completed the sale of RBC Royal Bank (Suriname) N.V. (RBC Suriname). As a result of the transaction, we recorded a total loss on disposal of $19 million (before- and after-tax), including a loss of $23 million in the second quarter in Non-interest expense – Other, and a gain of $4 million in the third quarter including foreign currency translation gains reclassified from Other components of equity. For further details, refer to Note 11 of our 2015 Annual Consolidated Financial Statements.

**Certain Caribbean Wealth Management businesses**
Subsequent to the end of our fiscal year, we have entered into a purchase and sale agreement on November 4, 2015, to sell our trust, custody and fund administration businesses in the Caribbean to SMP Partners Group, subject to customary closing conditions and regulatory approvals. The transaction is expected to close in early 2016. For further details, refer to Note 36 of our 2015 Annual Consolidated Financial Statements.

## Financial performance

### Overview

**2015 vs. 2014**

Net income of $10,026 million was up $1,022 million or 11% from a year ago. Diluted earnings per share (EPS) of $6.73 was up $0.73 and return on common equity (ROE) of 18.6% was down 40 bps from 19.0% last year. Our Common Equity Tier 1 (CET1) ratio was 10.6%.

Our results were driven by higher earnings in Personal & Commercial Banking, Capital Markets and Investor & Treasury Services, partially offset by lower earnings in Insurance and Wealth Management. Our results were also favourably impacted by a lower effective tax rate reflecting favourable income tax adjustments, the positive impact of foreign exchange translation, and a gain of $108 million (before- and after-tax) from the wind-up of a U.S.-based funding subsidiary that resulted in the release of foreign currency translation adjustment (CTA) which was recorded in Corporate Support. Prior year results included a loss of $100 million (before- and after-tax) related to the sale of RBC Jamaica and a provision of $40 million ($32 million after-tax) related to post-employment benefits and restructuring charges in the Caribbean.

Personal & Commercial Banking earnings mainly reflected solid volume growth across most businesses in Canada, strong fee-based revenue growth, and higher earnings in the Caribbean, partially offset by higher costs to support business growth and lower spreads. Capital Markets earnings were driven by growth in our global markets businesses mainly reflecting increased client activity, continued solid performance in our corporate and investment banking businesses, and the positive impact of foreign exchange translation, partially offset by lower results in certain legacy portfolios. Investor & Treasury Services earnings mainly reflected higher earnings due to increased client activity in our foreign exchange forwards business and higher foreign exchange transaction volumes, an additional month of earnings in Investor Services of $42 million ($28 million after-tax), increased custodial fees, and higher earnings from growth in client deposits. These factors were partially offset by lower funding and liquidity results. Wealth Management earnings decreased primarily reflecting higher costs in support of business growth in our Global Asset Management and Canadian Wealth Management businesses, restructuring costs of $122 million ($90 million after-tax) largely related to our U.S. & International Wealth Management business, lower transaction volumes, and higher provision for credit losses (PCL), partly offset by higher earnings from growth in average fee-based client assets. Insurance results decreased mainly due to a change in Canadian tax legislation impacting certain foreign affiliates which became effective November 1, 2014, a lower level of favourable actuarial adjustments, and higher net claims costs, which were partially offset by higher earnings from new U.K. annuity contracts, and a favourable impact of investment-related activities on the Canadian life business.

For further details on our business segment results and CET1 ratio, refer to the Business segment results and Capital management sections, respectively.

**2014 vs. 2013**

In 2014, net income of $9,004 million was up $662 million or 8% from 2013. Diluted EPS of $6.00 was up $0.51 and ROE of 19.0% was down 70 bps. Our CET1 ratio was 9.9%.

Our results were driven by higher earnings in all business segments, including the positive impact of foreign exchange translation. In addition, our results in 2013 included net favourable income tax adjustments in Corporate Support.

Capital Markets earnings reflected strong equity markets, our continued focus on origination and lending, and increased activity from client-focused strategies, partially offset by higher litigation provisions and related legal costs. Wealth Management results reflected growth in average fee-based client assets, partially offset by higher costs in support of business growth. Our insurance results reflected lower net claims costs, business growth in our European life and U.K. annuity products and favourable actuarial adjustments, partly offset by higher costs in support of business growth. Insurance results in 2013 included a charge of $160 million ($118 million after-tax) as a result of new tax legislation in Canada, which affects the policyholders' tax treatment of certain individual life insurance policies. Personal & Commercial Banking earnings reflected solid volume growth across most of our Canadian Banking businesses, partially offset by higher costs in support of business growth, and a loss of $100 million (before- and after-tax) related to the sale of RBC Royal Bank (Jamaica) Limited and RBTT Securities Jamaica Limited (collectively, RBC Jamaica).

### Impact of foreign currency translation

Our foreign currency-denominated results are impacted by exchange rate fluctuations. Revenue, PCL, insurance policyholder benefits, claims and acquisition expense (PBCAE), non-interest expense and net income denominated in foreign currency are translated at the average rate of exchange for the period.

The following table reflects the estimated impact of foreign exchange translation on key income statement items:

Table 5

| (Millions of Canadian dollars, except per share amounts) | 2015 vs. 2014 | 2014 vs. 2013 |
|---|---|---|
| *Increase (decrease):* | | |
| Total revenue | $ 1,012 | $ 818 |
| PCL | 11 | 9 |
| PBCAE | 75 | 75 |
| Non-interest expense | 652 | 510 |
| Income taxes | 113 | 103 |
| Net income | 161 | 121 |
| Impact on EPS: | | |
| Basic | $ 0.11 | $ 0.08 |
| Diluted | 0.11 | 0.08 |

The relevant average exchange rates that impact our business are shown in the following table:

Table 6

| (Average foreign currency equivalent of C$1.00) (1) | 2015 | 2014 | 2013 |
|---|---|---|---|
| U.S. dollar | **0.797** | 0.914 | 0.977 |
| British pound | **0.519** | 0.551 | 0.626 |
| Euro | **0.707** | 0.680 | 0.740 |

(1) Average amounts are calculated using month-end spot rates for the period.

## Total revenue

Table 7

| (Millions of Canadian dollars, except percentage amounts) | 2015 | 2014 | 2013 |
|---|---|---|---|
| Interest income | **$ 22,729** | $ 22,019 | $ 21,148 |
| Interest expense | **7,958** | 7,903 | 7,899 |
| **Net interest income** | **$ 14,771** | $ 14,116 | $ 13,249 |
| **Net interest margin (on average earning assets)** (1) | **1.71%** | 1.86% | 1.88% |
| Investments (2) | **$ 8,095** | $ 7,355 | $ 6,408 |
| Insurance (3) | **4,436** | 4,957 | 3,911 |
| Trading (see additional trading information section) | **552** | 742 | 867 |
| Banking (4) | **4,388** | 4,090 | 3,909 |
| Underwriting and other advisory | **1,885** | 1,809 | 1,569 |
| Other (5) | **1,194** | 1,039 | 769 |
| **Non-interest income** | **$ 20,550** | $ 19,992 | $ 17,433 |
| **Total revenue** | **$ 35,321** | $ 34,108 | $ 30,682 |

(1) Net interest margin (on average earning assets) is calculated as net interest income divided by average earning assets.
(2) Includes securities brokerage commissions, investment management and custodial fees, and mutual fund revenue.
(3) Includes premiums and investment and fee income. Investment income includes the change in fair value of investments backing policyholder liabilities and is largely offset in PBCAE.
(4) Includes service charges, foreign exchange revenue other than trading, card service revenue and credit fees.
(5) Includes other non-interest income, net gain (loss) on available-for-sale (AFS) securities and share of profit in associates.

**2015 vs. 2014**

Total revenue increased $1,213 million or 4% from last year, which included the positive impact of foreign exchange translation of $1,012 million. The negative change in fair value of investments backing our policyholders liabilities, which was largely offset in PBCAE, decreased total revenue by $463 million.

Net interest income increased $655 million or 5%, mainly due to solid volume growth across most businesses in Canadian Banking, and higher trading-related net interest income and solid lending growth in Capital Markets. The positive impact of foreign exchange translation also contributed to the increase. These factors were partially offset by lower spreads.

Net interest margin was down 15 bps compared to last year, largely due to the low interest rate environment, and competitive pressures.

Investments revenue increased $740 million or 10%, mainly due to growth in average fee-based client assets resulting from capital appreciation and net sales, and the positive impact of foreign exchange translation. Higher securities brokerage commissions in Capital Markets, and higher fee-based revenue primarily attributable to strong mutual funds asset growth resulting in higher mutual fund distribution fees in Canadian Banking also contributed to the increase. These factors were partly offset by lower transaction volumes in Wealth Management.

Insurance revenue decreased $521 million or 11%, mainly due to the change in fair value of investments backing our policyholder liabilities resulting from an increase in long-term interest rates, and a reduction of revenue related to our retrocession contracts, both of which were largely offset in PBCAE. These factors were partially offset by business growth in Canadian and International insurance, and the positive impact of foreign exchange translation.

Banking revenue increased $298 million or 7%, mainly due to higher credit card balances and transaction volumes, and improved spreads. Higher service fee revenue also contributed to the increase.

Underwriting and other advisory revenue increased $76 million or 4%, primarily due to higher debt origination reflecting increased client issuance activity, and strong growth in M&A activity reflecting increased mandates in the U.S. and Europe. These factors were partially offset by lower equity origination reflecting decreased client activity as compared to the strong levels last year.

Other revenue increased $155 million or 15%, mainly due to a gain of $108 million (before- and after-tax) from the wind-up of a U.S.-based funding subsidiary that resulted in the release of CTA, which was recorded in Corporate Support.

**2014 vs. 2013**

Total revenue increased $3,426 million or 11% as compared to 2013, primarily due to the positive change in fair value of investments backing our policyholder liabilities of $930 million resulting from a decrease in long-term interest rates, largely offset in PBCAE, the positive impact of foreign exchange translation, higher revenue from growth in average fee-based client assets in Wealth Management resulting from capital appreciation and strong net sales, solid volume growth of 5% across most of our businesses in Canadian Banking, and higher trading-related net interest income in Capital Markets. Strong growth in equity origination reflecting increased issuance activity, higher equity trading revenue due to strong market conditions, and higher lending activity in Capital Markets also contributed to the increase. These factors were partially offset by the unfavourable impact of the implementation of funding valuation adjustments.

**Additional trading information**

Table 8

| (Millions of Canadian dollars) | 2015 | 2014 | 2013 |
|---|---|---|---|
| Total trading revenue (1) | | | |
| Net interest income | **$ 2,398** | $ 2,029 | $ 1,661 |
| Non-interest income | **552** | 742 | 867 |
| **Total trading revenue** | **$ 2,950** | $ 2,771 | $ 2,528 |
| Total trading revenue by product | | | |
| Interest rate and credit | **$ 1,400** | $ 1,560 | $ 1,611 |
| Equities | **1,045** | 814 | 594 |
| Foreign exchange and commodities | **505** | 397 | 323 |
| **Total trading revenue** | **$ 2,950** | $ 2,771 | $ 2,528 |
| Trading revenue (teb) by product | | | |
| Interest rate and credit | **$ 1,400** | $ 1,560 | $ 1,611 |
| Equities | **1,614** | 1,305 | 972 |
| Foreign exchange and commodities | **504** | 397 | 323 |
| **Total trading revenue (teb)** | **$ 3,518** | $ 3,262 | $ 2,906 |
| Trading revenue (teb) by product – Capital Markets | | | |
| Interest rate and credit | **$ 1,238** | $ 1,293 | $ 1,350 |
| Equities | **1,590** | 1,244 | 942 |
| Foreign exchange and commodities | **376** | 333 | 286 |
| **Total Capital Markets trading revenue (teb)** | **$ 3,204** | $ 2,870 | $ 2,578 |

(1) Includes a gain of $40 million (2014 – $105 million loss; 2013 – nil) related to a funding valuation adjustment on uncollateralized OTC derivatives.

**2015 vs. 2014**
Total trading revenue of $2,950 million, which comprises trading-related revenue recorded in Net interest income and Non-interest income, was up $179 million, or 6% including the positive impact of foreign exchange translation, mainly due to higher equities trading revenue reflecting increased client activity primarily in the first half of the year. This factor was partially offset by lower revenue in certain legacy portfolios including the exit from certain proprietary trading strategies last year to comply with the Volcker Rule, and lower fixed income trading revenue reflecting challenging market conditions in the second half of the year. In addition, trading revenue in the prior year was unfavourably impacted by the implementation of funding valuation adjustments.

**2014 vs. 2013**
Total trading revenue of $2,771 million, which comprises trading-related revenue recorded in Net interest income and Non-interest income, was up $243 million, or 10% as compared to 2013, mainly due to higher equity trading revenue reflecting strong market conditions and higher commodities trading revenue. These factors were partially offset by lower fixed income trading revenue largely driven by the unfavourable impact of the implementation of funding valuation adjustments, and the exit from certain proprietary trading strategies to comply with the Volcker Rule.

## Provision for credit losses

**2015 vs. 2014**
Total PCL decreased $67 million or 6% from a year ago, mainly due to lower PCL in Personal & Commercial Banking, partially offset by higher PCL in Capital Markets and Wealth Management.

**2014 vs. 2013**
Total PCL decreased $73 million or 6% as compared to 2013, mainly due to lower provisions in Capital Markets and Wealth Management, partially offset by higher provisions in Personal & Commercial Banking, primarily in Caribbean Banking.

For further details on PCL, refer to the Credit quality performance section.

## Insurance policyholder benefits, claims and acquisition expense

**2015 vs. 2014**
PBCAE decreased $610 million or 17% from a year ago, mainly due to a reduction of PBCAE related to our retrocession contracts, and the change in fair value of investments backing our policyholder liabilities resulting from the change in long-term interest rates, both of which were largely offset in revenue. These factors were partially offset by business growth in Canadian and International insurance, a lower level of favourable actuarial adjustments in the current year reflecting management actions and assumption changes, and an increase due to the impact of foreign exchange translation.

**2014 vs. 2013**
PBCAE increased $789 million or 28% from the prior year, mainly due to the change in fair value of investments backing our policyholder liabilities, which was largely offset in revenue, and the impact of foreign exchange translation. These factors were partially offset by lower net claims costs. In addition, our PBCAE in 2013 included the unfavourable impact of the charge of $160 million related to new tax legislation in Canada, which affects the policyholders' tax treatment of certain individual life insurance policies, and a favourable impact from interest and asset-related activities on the Canadian life business.

## Non-interest expense

Table 9

| (Millions of Canadian dollars, except percentage amounts) | 2015 | 2014 | 2013 |
|---|---|---|---|
| Salaries | $ 5,197 | $ 4,834 | $ 4,604 |
| Variable compensation | 4,533 | 4,388 | 3,924 |
| Benefits and retention compensation | 1,607 | 1,561 | 1,464 |
| Share-based compensation | 246 | 248 | 256 |
| Human resources | $ 11,583 | $ 11,031 | $ 10,248 |
| Equipment | 1,277 | 1,147 | 1,081 |
| Occupancy | 1,410 | 1,330 | 1,235 |
| Communications (1) | 888 | 847 | 796 |
| Professional fees | 932 | 763 | 753 |
| Amortization of other intangibles | 712 | 666 | 566 |
| Other (1) | 1,836 | 1,877 | 1,535 |
| **Non-interest expense** | $ 18,638 | $ 17,661 | $ 16,214 |
| **Efficiency ratio** (2) | 52.8% | 51.8% | 52.8% |

(1) Amounts have been revised from those previously presented.
(2) Efficiency ratio is calculated as non-interest expense divided by total revenue.

**2015 vs. 2014**

Non-interest expense increased $977 million or 6% mainly reflecting an increase due to the impact of foreign exchange translation of $652 million and higher costs in support of business growth. Restructuring costs of $122 million ($90 million after-tax) largely related to our U.S. & International Wealth Management business also contributed to the increase. These factors were partially offset by lower litigation provisions and related legal costs in Capital Markets, and continuing benefits from our efficiency management activities. The prior year included the loss of $100 million related to the sale of RBC Jamaica and a provision of $40 million related to post-employment benefits and restructuring charges in the Caribbean.

Our efficiency ratio of 52.8% increased 100 bps from 51.8% last year mainly due to the change in fair value of investments backing our policyholder liabilities, and higher costs in support of business growth, partially offset by continuing benefits from our efficiency management activities.

**2014 vs. 2013**

Non-interest expense increased $1,447 million or 9%, primarily due to the impact of foreign exchange translation of $510 million, higher costs in support of business growth, and higher variable compensation driven by higher revenue in Wealth Management and higher results in Capital Markets. Increased litigation provisions and related legal costs in Capital Markets, and the loss of $100 million related to the sale of RBC Jamaica also contributed to the increase. These factors were partly offset by continuing benefits from our efficiency management activities.

Our efficiency ratio of 51.8% decreased 100 bps from 52.8% in 2013, mainly due to continuing benefits from our efficiency management activities.

## Income and other taxes

Table 10

| (Millions of Canadian dollars, except percentage amounts) | 2015 | 2014 | 2013 |
|---|---|---|---|
| **Income taxes** | $ 2,597 | $ 2,706 | $ 2,105 |
| **Other taxes** | | | |
| Goods and services sales taxes | $ 426 | $ 395 | $ 370 |
| Payroll taxes | 577 | 529 | 497 |
| Capital taxes | 100 | 86 | 85 |
| Property taxes | 121 | 106 | 119 |
| Insurance premium taxes | 50 | 51 | 50 |
| Business taxes | 59 | 8 | 25 |
| | $ 1,333 | $ 1,175 | $ 1,146 |
| **Total income and other taxes** | $ 3,930 | $ 3,881 | $ 3,251 |
| **Net income before income taxes** | $ 12,623 | $ 11,710 | $ 10,447 |
| Canadian statutory income tax rate (1) | 26.3% | 26.3% | 26.2% |
| Lower average tax rate applicable to subsidiaries | (0.9)% | (2.3)% | (1.8)% |
| Tax-exempt income from securities | (3.6)% | (3.3)% | (2.8)% |
| Tax rate change | 0.3% | 0.0% | 0.0% |
| Effect of previously unrecognized tax loss, tax credit or temporary differences | (0.1)% | (0.1)% | (0.5)% |
| Other | (1.4)% | 2.5% | (1.0)% |
| **Effective income tax rate** | 20.6% | 23.1% | 20.1% |
| **Effective total tax rate** (2) | 28.2% | 30.1% | 28.0% |

(1) Blended Federal and Provincial statutory income tax rate.
(2) Total income and other taxes as a percentage of net income before income taxes and other taxes.

**2015 vs. 2014**
Income tax expense decreased $109 million or 4% and the effective income tax rate of 20.6% decreased 250 bps from last year mainly due to net favourable tax adjustments in the current year, partially offset by higher earnings before income taxes.

Other taxes increased $158 million or 13%, mainly due to higher business and payroll taxes, as well as higher goods and services sales taxes. In addition to the income and other taxes reported in our Consolidated Statements of Income, we recorded income tax recoveries of $878 million (2014 – $643 million) in shareholders' equity, primarily reflecting foreign currency translation losses from hedging activities.

**2014 vs. 2013**
Income tax expense increased $601 million or 29% from 2013, mainly due to higher earnings before income taxes. The effective income tax rate of 23.1% increased 300 bps from 20.1% in 2013, mainly due to favourable income tax adjustments in 2013 related to prior years.

Other taxes increased $29 million or 3% from 2013, mainly due to higher payroll taxes and sales taxes which were partially offset by lower business taxes.

## Client assets

**Assets under administration**
Assets under administration (AUA) are assets administered by us which are beneficially owned by our clients. We provide services that are administrative in nature, including safekeeping, collecting investment income, settling purchase and sale transactions, and record keeping. Underlying investment strategies within AUA are determined by our clients and generally do not impact the administrative fees that we receive. Administrative fees can be impacted by factors such as asset valuation level changes from market movements, types of services administered, transaction volumes, geography and client relationship pricing based on volumes or multiple services.

Our Investor & Treasury Services business is the primary business segment that has AUA with approximately 79% of total AUA, as at October 31, 2015, followed by our Wealth Management business with approximately 16% of total AUA.

**2015 vs. 2014**
AUA decreased $37.9 billion or 1% compared to last year, mainly reflecting changes in client asset mix and unfavourable market conditions, partially offset by the impact of foreign exchange translation, net sales and capital appreciation.

The following table summarizes AUA by geography and asset class:

**AUA by geographic mix and asset class** — **Table 11**

| (Millions of Canadian dollars) | 2015 | 2014 |
|---|---|---|
| **Canada** (1) | | |
| Money Market | **$ 31,500** | $ 31,100 |
| Fixed Income | **685,600** | 736,200 |
| Equity | **669,900** | 711,500 |
| Multi-asset and other | **642,400** | 618,700 |
| **Total Canada** | **$ 2,029,400** | $ 2,097,500 |
| **U.S.** (1) | | |
| Money Market | **$ 33,100** | $ 28,700 |
| Fixed Income | **90,800** | 82,500 |
| Equity | **152,700** | 138,200 |
| Multi-asset and other | **21,800** | 16,200 |
| **Total U.S.** | **$ 298,400** | $ 265,600 |
| **Other International** (1) | | |
| Money Market | **$ 47,500** | $ 54,400 |
| Fixed Income | **375,400** | 405,600 |
| Equity | **804,000** | 867,200 |
| Multi-asset and other | **1,054,400** | 956,700 |
| **Total International** | **$ 2,281,300** | $ 2,283,900 |
| **Total AUA** | **$ 4,609,100** | $ 4,647,000 |

(1) Geographic information is based on the location from where our clients are serviced.

**Assets under management**
Assets under management (AUM) are assets managed by us which are beneficially owned by our clients. Management fees are paid by the investment funds for the investment capabilities of an investment manager and can also include administrative services. Management fees may be calculated daily, monthly or quarterly as a percentage of the AUM, depending on the distribution channel, underlying products and investment strategies. In general, equity strategies carry a higher fee rate than fixed income or money market strategies. Fees are also impacted by asset mix and relationship pricing for clients using multiple services. Higher risk assets generally produce higher fees, while clients using multiple services can take advantage of synergies which reduce the fees they are charged. Certain funds may also include performance fee arrangements, which are recorded when certain benchmarks or performance targets are achieved. These factors could lead to differences on fees earned by products and therefore net return by asset class may vary despite similar average AUM. Our Wealth Management segment is the primary business segment that has AUM.

**2015 vs. 2014**
AUM increased $41.4 billion or 9% compared to last year, primarily reflecting the impact of foreign exchange translation, as well as net sales and capital appreciation.

The following table presents changes in AUM for the years ended October 31, 2015 and October 31, 2014:

**Client assets – AUM** — Table 12

| (Millions of Canadian dollars) | 2015 | 2014 |
|---|---|---|
| AUM, beginning balance | **$ 457,000** | $ 391,100 |
| Net asset flows: | | |
| Money market | **(4,900)** | (5,600) |
| Fixed income | **8,800** | 14,300 |
| Equity | **900** | 4,100 |
| Multi-asset and other | **13,400** | 17,000 |
| Market impact and other | **23,200** | 36,100 |
| **AUM, balance at end of year** | **$ 498,400** | $ 457,000 |

## Business segment results

### Results by business segment

The following table summarizes our results by business segment:

Table 13

| (Millions of Canadian dollars, except percentage amounts) | 2015 Personal & Commercial Banking | Wealth Management | Insurance | Investor & Treasury Services | Capital Markets (1) | Corporate Support (1) | 2015 Total | 2014 Total | 2013 Total |
|---|---|---|---|---|---|---|---|---|---|
| Net interest income | **$ 10,004** | **$ 493** | **$ –** | **$ 818** | **$ 3,970** | **$ (514)** | **$ 14,771** | $ 14,116 | $ 13,249 |
| Non-interest income | **4,309** | **6,282** | **4,436** | **1,220** | **4,093** | **210** | **20,550** | 19,992 | 17,433 |
| **Total revenue** | **$ 14,313** | **$ 6,775** | **$ 4,436** | **$ 2,038** | **$ 8,063** | **$ (304)** | **$ 35,321** | $ 34,108 | $ 30,682 |
| PCL | **984** | **46** | **–** | **(1)** | **71** | **(3)** | **1,097** | 1,164 | 1,237 |
| PBCAE | **–** | **–** | **2,963** | **–** | **–** | **–** | **2,963** | 3,573 | 2,784 |
| Non-interest expense | **6,611** | **5,292** | **613** | **1,301** | **4,696** | **125** | **18,638** | 17,661 | 16,214 |
| Net income before income taxes | **$ 6,718** | **$ 1,437** | **$ 860** | **$ 738** | **$ 3,296** | **$ (426)** | **$ 12,623** | $ 11,710 | $ 10,447 |
| Income tax | **1,712** | **396** | **154** | **182** | **977** | **(824)** | **2,597** | 2,706 | 2,105 |
| Net income | **$ 5,006** | **$ 1,041** | **$ 706** | **$ 556** | **$ 2,319** | **$ 398** | **$ 10,026** | $ 9,004 | $ 8,342 |
| ROE (2) | **30.0%** | **17.4%** | **44.3%** | **20.3%** | **13.6%** | **n.m.** | **18.6%** | 19.0% | 19.7% |
| Average assets | **$ 386,100** | **$ 29,100** | **$ 13,700** | **$ 125,300** | **$ 477,300** | **$ 21,300** | **$ 1,052,800** | $ 906,500 | $ 852,000 |

(1) Net interest income, total revenue and net income before income taxes are presented in Capital Markets on a taxable equivalent basis (teb). The teb adjustment is eliminated in the Corporate Support segment. For a further discussion, refer to the How we measure and report our business segments section.

(2) These measures may not have a standardized meaning under GAAP and may not be comparable to similar measures disclosed by other financial institutions. For further details, refer to the Key performance and non-GAAP measures section.

### How we measure and report our business segments

Our management reporting framework is intended to measure the performance of each business segment as if it were a stand-alone business and reflects the way that the business segment is managed. This approach is intended to ensure that our business segments' results include all applicable revenue and expenses associated with the conduct of their business and depicts how management views those results. The following highlights the key aspects of how our business segments are managed and reported:

- Personal & Commercial Banking reported results include securitized Canadian residential mortgage and credit card loans and related amounts for income and provisions for credit losses on impaired loans.
- Wealth Management reported results also include disclosure in U.S. dollars as we review and manage the results of certain businesses largely in this currency.
- Capital Markets results are reported on a taxable equivalent basis (teb), which grosses up net interest income from certain tax-advantaged sources (Canadian taxable corporate dividends) to their effective taxable equivalent value with a corresponding offset recorded in the provision for income taxes. We record the elimination of the teb adjustments in Corporate Support. We believe these adjustments are useful and reflect how Capital Markets manages its business, since it enhances the comparability of revenue and related ratios across taxable revenue and our principal tax-advantaged source of revenue. The use of teb adjustments and measures may not be comparable to similar generally accepted accounting principles (GAAP) measures or similarly adjusted amounts disclosed by other financial institutions.
- Corporate Support results include all enterprise-level activities that are undertaken for the benefit of the organization that are not allocated to our five business segments, including residual asset/liability management results, impact from income tax adjustments, net charges associated with unattributed capital and PCL on loans not yet identified as impaired.

**Key methodologies**
The following outlines the key methodologies and assumptions used in our management reporting framework. These are periodically reviewed by management to ensure they remain valid.

*Expense allocation*
To ensure that our business segments' results include expenses associated with the conduct of their business, we allocate costs incurred or services provided by Technology & Operations and Functions, which are directly undertaken or provided on the business segments' behalf. For other costs not directly attributable to our business segments, including overhead costs and other indirect expenses, we use our management reporting framework for allocating these costs to each business segment in a manner that is intended to reflect the underlying benefits.

*Capital attribution*
Our framework also determines the attribution of capital to our business segments in a manner that is intended to consistently measure and align economic costs with the underlying benefits and risks associated with the activities of each business segment. The amount of capital assigned to each business segment is referred to as attributed capital. Unattributed capital and associated net charges are reported in Corporate Support. For further information, refer to the Capital management section.

*Funds transfer pricing*
Funds transfer pricing refers to the pricing of intra-company borrowing or lending. We employ a funds transfer pricing process that motivates economically sound business decisions by providing risk-adjusted pricing and profitability guidance after taking into consideration interest rate and liquidity risk as well as applicable regulatory requirements. Funds transfer pricing also provides the basis for risk-adjusted profitability measurement for our products and measures.

*Provisions for credit losses*
PCL are recorded to recognize estimated losses on impaired loans, as well as losses that have been incurred but are not yet identified in our loans portfolio. This portfolio includes on-balance sheet exposures, such as loans and acceptances, and off-balance sheet items such as letters of credit, guarantees and unfunded commitments. PCL on impaired loans are included in the results of each business segment to fully reflect the appropriate expenses related to the conduct of each business segment. PCL on loans not yet identified as impaired are included in Corporate Support, as Group Risk Management (GRM) effectively controls this through its monitoring and oversight of various lending portfolios throughout the enterprise. For details on our accounting policy on Allowance for credit losses, refer to Note 2 of our 2015 Annual Consolidated Financial Statements.

## Key performance and non-GAAP measures

**Performance measures**
*Return on common equity*
We measure and evaluate the performance of our consolidated operations and each business segment using a number of financial metrics, such as net income and ROE. We use ROE, at both the consolidated and business segment levels, as a measure of return on total capital invested in our business. Management views the business segment ROE measure as a useful measure for supporting investment and resource allocation decisions because it adjusts for certain items that may affect comparability between business segments and certain competitors.

Our consolidated ROE calculation is based on net income available to common shareholders divided by total average common equity for the period. Business segment ROE calculations are based on net income available to common shareholders divided by average attributed capital for the period. For each segment, average attributed capital includes the capital required to underpin various risks as described in the Capital Management section and amounts invested in goodwill and intangibles.

The attribution of capital and risk capital involves the use of assumptions, judgments and methodologies that are regularly reviewed and revised by management as deemed necessary. Changes to such assumptions, judgments and methodologies can have a material effect on the segment ROE information that we report. Other companies that disclose information on similar attributions and related return measures may use different assumptions, judgments and methodologies.

The following table provides a summary of our ROE calculations:

**Calculation of ROE** **Table 14**

| | 2015 | | | | | | | 2014 | 2013 |
|---|---|---|---|---|---|---|---|---|---|
| (Millions of Canadian dollars, except percentage amounts) | **Personal & Commercial Banking** | **Wealth Management** | **Insurance** | **Investor & Treasury Services** | **Capital Markets** | **Corporate Support** | **Total** | Total | Total |
| Net income available to common shareholders | **$ 4,937** | **$ 1,021** | **$ 701** | **$ 545** | **$ 2,259** | **$ 271** | **$ 9,734** | $ 8,697 | $ 7,991 |
| Average common equity (1), (2) | **16,500** | **5,900** | **1,600** | **2,700** | **16,550** | **9,050** | **52,300** | 45,700 | 40,600 |
| ROE (3) | **30.0%** | **17.4%** | **44.3%** | **20.3%** | **13.6%** | **n.m.** | **18.6%** | 19.0% | 19.7% |

(1) Average common equity represents rounded figures.
(2) The amounts for the segments are referred to as attributed capital.
(3) ROE is based on actual balances of average common equity before rounding.

*Embedded value for Insurance operations*
Embedded value is a measure of shareholder value embedded in the balance sheet of our Insurance segment, excluding any value from future new sales. We use the change in embedded value between reporting periods as a measure of the value created by the insurance operations during the period.

We define embedded value as the value of equity held in our Insurance segment and the value of in-force business (existing policies). The value of in-force business is calculated as the present value of future expected earnings on in-force business less the cost of capital required to support in-force business. We use discount rates equal to long-term risk free rates plus a spread. Required capital uses the capital frameworks in the jurisdictions in which we operate.

Key drivers affecting the change in embedded value from period to period are new sales, investment performance, claims and policyholder experience, change in actuarial assumptions, changes in foreign exchange rates and changes in shareholder equity arising from transfers in capital.

Embedded value does not have a standardized meaning under GAAP and may not be directly comparable to similar measures disclosed by other companies. Given that this measure is specifically used for our Insurance segment and involves the use of discount rates to present value the future expected earnings and capital required for the in-force business, reconciliation to financial statements information is not applicable.

**Non-GAAP measures**

We believe that certain non-GAAP measures described below are more reflective of our ongoing operating results, and provide readers with a better understanding of management's perspective on our performance. These measures enhance the comparability of our financial performance for the year ended October 31, 2015 with results from last year as well as, in the case of economic profit, measure relative contribution to shareholder value. Non-GAAP measures do not have a standardized meaning under GAAP and may not be comparable to similar measures disclosed by other financial institutions.

The following discussion describes the non-GAAP measures we use in evaluating our operating results.

*Economic profit*

Economic profit is net income excluding the after-tax effect of amortization of other intangibles less a capital charge for use of attributed capital. It measures the return generated by our businesses in excess of our cost of capital, thus enabling users to identify relative contributions to shareholder value.

The capital charge includes a charge for common equity and preferred shares. For 2015, our cost of capital was 9.0%.

The following table provides a summary of our Economic profit:

**Economic profit** **Table 15**

| | 2015 | | | | | | |
|---|---|---|---|---|---|---|---|
| (Millions of Canadian dollars) | **Personal & Commercial Banking** | **Wealth Management** | **Insurance** | **Investor & Treasury Services** | **Capital Markets** | **Corporate Support** | **Total** |
| Net income | **$ 5,006** | **$ 1,041** | **$ 706** | **$ 556** | **$ 2,319** | **$ 398** | **$ 10,026** |
| add: Non-controlling interests | **(8)** | **2** | **–** | **(1)** | **–** | **(94)** | **(101)** |
| After-tax effect of amortization of other intangibles | **22** | **69** | **–** | **21** | **–** | **1** | **113** |
| Goodwill and intangibles writedown | **–** | **4** | **–** | **–** | **–** | **–** | **4** |
| Adjusted net income (loss) | **$ 5,020** | **$ 1,116** | **$ 706** | **$ 576** | **$ 2,319** | **$ 305** | **$ 10,042** |
| less: Capital charge | **1,544** | **551** | **148** | **251** | **1,550** | **852** | **4,896** |
| Economic profit (loss) | **$ 3,476** | **$ 565** | **$ 558** | **$ 325** | **$ 769** | **$ (547)** | **$ 5,146** |

| | 2014 | | | | | | | 2013 |
|---|---|---|---|---|---|---|---|---|
| (Millions of Canadian dollars) | Personal & Commercial Banking | Wealth Management | Insurance | Investor & Treasury Services | Capital Markets | Corporate Support | Total | Total |
| Net income | $ 4,475 | $ 1,083 | $ 781 | $ 441 | $ 2,055 | $ 169 | $ 9,004 | $ 8,342 |
| add: Non-controlling interests | 1 | (1) | – | (1) | – | (93) | (94) | (98) |
| After-tax effect of amortization of other intangibles | 27 | 73 | – | 21 | 1 | 1 | 123 | 117 |
| Goodwill and intangibles writedown | – | 6 | – | – | 2 | – | 8 | – |
| Adjusted net income (loss) | $ 4,503 | $ 1,161 | $ 781 | $ 461 | $ 2,058 | $ 77 | $ 9,041 | $ 8,361 |
| less: Capital charge | 1,439 | 521 | 147 | 205 | 1,333 | 696 | 4,341 | 3,702 |
| Economic profit (loss) | $ 3,064 | $ 640 | $ 634 | $ 256 | $ 725 | $ (619) | $ 4,700 | $ 4,659 |

*Results excluding specified items*

Our results were impacted by the following specified items:

- For the year ended October 31, 2015, a gain of $108 million (before- and after-tax) from the wind-up of a U.S.-based funding subsidiary that resulted in the release of CTA that was previously booked in other components of equity (OCE), which was recorded in Corporate Support.
- For the year ended October 31, 2014, in our Personal & Commercial Banking segment:
  - A total loss of $100 million (before- and after-tax) related to the sale of RBC Jamaica, comprised of a loss of $60 million (before- and after-tax) in the first quarter of 2014, and a further loss of $40 million (before- and after-tax) in the third quarter of 2014 which includes foreign currency translation related to the closing of the sale of RBC Jamaica; and
  - A provision of $40 million ($32 million after-tax) related to post-employment benefits and restructuring charges in the Caribbean.

The following table provides calculations of our business segment results and measures excluding this specified item for the year ended October 31, 2014:

**Personal & Commercial Banking** **Table 16**

| (Millions of Canadian dollars, except percentage amounts) | As reported | 2014 Items excluded: Loss related to the sale of RBC Jamaica | 2014 Items excluded: Provision for post-employment benefits and restructuring charges | Adjusted |
|---|---|---|---|---|
| **Total revenue** | $ 13,730 | $ – | $ – | $ 13,730 |
| PCL | 1,103 | – | – | 1,103 |
| Non-interest expense | 6,563 | (100) | (40) | 6,423 |
| **Net income before taxes** | 6,064 | 100 | 40 | 6,204 |
| **Net income** | $ 4,475 | $ 100 | $ 32 | $ 4,607 |
| **Selected balances and other information** | | | | |
| Non-interest expense | $ 6,563 | $ (100) | $ (40) | $ 6,423 |
| Total revenue | 13,730 | | | 13,730 |
| Efficiency ratio | 47.8% | | | 46.8% |
| Revenue growth rate | 5.5% | | | 5.5% |
| Non-interest expense growth rate | 6.4% | | | 4.2% |
| Operating leverage | (0.9%) | | | 1.3% |

## Personal & Commercial Banking

Personal & Commercial Banking is comprised of our personal and business banking operations, and our auto financing and retail investment businesses, including our online discount brokerage channel, and operates through two businesses: Canadian Banking and Caribbean & U.S. Banking. We provide services to more than 13.5 million individual, business and institutional clients across Canada, the Caribbean and the U.S. In Canada, we provide a broad suite of financial products and services through our extensive branch, automated teller machine (ATM), online, mobile and telephone banking networks, as well as through a large number of proprietary sales professionals. In the Caribbean, we offer a broad range of financial products and services to individuals and business clients, and public institutions in targeted markets. In the U.S., we serve the cross-border banking needs of Canadian clients within the U.S. through online channels.

In Canada, we compete with other Schedule I banks, independent trust companies, foreign banks, credit unions, caisses populaires, and auto financing companies. We maintain top (#1 or #2) rankings in market share in this competitive environment for all key retail and business financial product categories, and have the largest branch network, the most ATMs and the largest mobile sales network across Canada. In the Caribbean, our competition includes banks, trust companies and investment management companies serving retail and corporate customers and public institutions. We continue to be the second-largest bank as measured by assets in the English Caribbean, with 79 branches in 17 countries and territories. In the U.S., we compete primarily with other Canadian banking institutions with operations in the U.S.

**Economic and market review**

We continued to see solid volume growth across most of our Canadian banking businesses, despite slowing economic conditions in Canada particularly in the first half of fiscal 2015. The continuing low interest rate environment has driven solid, although slower industry growth compared to last year. Historically low credit loss rates in our business and consumer products reflected a strong labour market in Canada during most of the calendar year. Our businesses continued to be impacted by competitive pressures. In the Caribbean, unfavourable economic conditions continued to negatively impact our results through lower loan volumes, and spread compression.

**Highlights**

In Canada:

- We achieved solid volume growth across all products, with particular strength in:
  - Home equity supported by the RBC Newcomer Advantage and our Employee Pricing campaigns; and
  - Credit cards through strong account and balance growth in our industry leading Avion ® card.
- We achieved improved volume in Business Financial Services as we have focused our attention in certain business segments to strengthen our market share and we have expanded our sales force in the upper end of the market.
- We have continued to invest in digitizing our client experience with a focus on speed of service and simplifying the end-to-end processes:
  - Launched Cheque-Pro™, allowing high cheque volume clients connecting to our online banking channels using an in-office scanner to make deposits;
  - Continued to evolve the branch network for basic service transactions while investing in our digital and mobile platforms. We currently have nearly 5 million active clients on our digital and mobile platforms, with particularly strong growth of 23% in the number of active clients using our mobile platform;
  - Rolled out Host Card Emulation technology allowing RBC clients with Android devices to use RBC Wallet anywhere in the world with any mobile network.

- As a result of our successes, we received external recognition as an industry leader and were named:
  - Best Global Retail Bank ( *Retail Banker International*) for the second consecutive year;
  - Best Trade Finance Bank in Canada ( *Global Finance Magazine*) for the third consecutive year;
  - Best Private Banking Services Overall in Canada 2015 ( *Euromoney*) for the eighth consecutive year;
  - Bank of the Year in Canada ( *The Banker*).

In the Caribbean:
- We continued to focus on quality asset growth while reducing our structural costs to minimize the impact of challenging market conditions.
- We launched a new mobile payment solution, RBC EZPay, allowing merchants to capture payment transactions by inserting card reader plugs into a smartphone.
- Completed the sale of RBC Suriname to Republic Bank Ltd. in July 2015.
- As a result of our successes, we were named #1 Bank in the Caribbean and in Trinidad and Tobago ( *The Banker*).

**Outlook and priorities**

Financial conditions in Canada are expected to improve, driven by the continued low interest rate environment, strong labour markets, and higher net exports. We expect continued solid volume growth across most of our products, but anticipate increasing pricing and competitive pressures resulting from slowing banking industry growth and the low interest rate environment.

In the Caribbean, challenging market conditions and slow economic growth continue to temper our outlook. We expect net interest margins to remain challenged due to low interest rates and competitive pressures. However, we expect to strengthen our business performance through efficiency management, increases in fee revenue, and quality asset growth.

For further details on our general economic review and outlook, refer to the Economic and market review and outlook section.

*Key strategic priorities for 2016*

In Canada, our priorities are to:
- Transform how we serve clients by enabling digital access and providing our clients with advice and solutions, personalized offers and client loyalty rewards.
- Accelerate growth in key segments and increase our presence in underpenetrated areas to achieve industry-leading volume growth.
- Rapidly deliver secure, enhanced payment and mobile solutions to our clients.
- Achieve greater agility and efficiency by simplifying, digitizing and automating processes and the end-to-end client experience.

In the Caribbean, we are focused on targeting markets where we can compete and drive sustainable profitability, with a strategic focus on corporate, business, professional and business owner clientele. In the U.S., we are focused on meeting the banking and borrowing needs of our cross-border clients through an innovative direct banking approach by providing seamless access to their entire RBC relationship.

| Personal & Commercial Banking | | | Table 17 |
|---|---|---|---|
| (Millions of Canadian dollars, except number of and percentage amounts and as otherwise noted) | **2015** | 2014 | 2013 |
| Net interest income | **$ 10,004** | $ 9,743 | $ 9,434 |
| Non-interest income | **4,309** | 3,987 | 3,585 |
| **Total revenue** | **14,313** | 13,730 | 13,019 |
| PCL | **984** | 1,103 | 995 |
| Non-interest expense | **6,611** | 6,563 | 6,168 |
| **Net income before income taxes** | **6,718** | 6,064 | 5,856 |
| **Net income** | **$ 5,006** | $ 4,475 | $ 4,380 |
| **Revenue by business** | | | |
| Canadian Banking | **$ 13,379** | $ 12,869 | $ 12,220 |
| Caribbean & U.S. Banking | **934** | 861 | 799 |
| **Key ratios** | | | |
| ROE | **30.0%** | 29.0% | 30.5% |
| NIM (1) | **2.71%** | 2.77% | 2.78% |
| Efficiency ratio (2) | **46.2%** | 47.8% | 47.4% |
| Efficiency ratio adjusted (2), (3) | **n.a.** | 46.8% | n.a. |
| Operating leverage | **3.5%** | (0.9)% | (1.3)% |
| Operating leverage adjusted (3) | **1.3%** | 1.3% | n.a. |
| **Selected average balance sheet information** | | | |
| Total assets (4) | **$ 386,100** | $367,900 | $ 354,300 |
| Total earning assets (5) | **369,000** | 351,300 | 338,700 |
| Loans and acceptances (4), (5) | **367,500** | 350,700 | 336,800 |
| Deposits | **298,600** | 278,800 | 262,200 |
| **Other information** | | | |
| AUA (6) | **$ 223,500** | $214,200 | $ 192,200 |
| AUM | **4,800** | 4,000 | 3,400 |
| Number of employees (FTE) (4) | **35,007** | 36,113 | 37,951 |
| Effective income tax rate | **25.5%** | 26.2% | 25.2% |
| **Credit information** | | | |
| Gross impaired loans as a % of average net loans and acceptances (4) | **0.49%** | 0.55% | 0.55% |
| PCL on impaired loans as a % of average net loans and acceptances | **0.27%** | 0.31% | 0.30% |

**Estimated impact of U.S. dollar and Trinidad & Tobago dollar (TTD) translation on key income statement items**

| (Millions of Canadian dollars, except percentage amounts) | **2015 vs. 2014** |
|---|---|
| *Increase (decrease):* | |
| Total revenue | **$ 72** |
| Non-interest expense | **43** |
| Net income | **19** |
| Percentage change in average US$ equivalent of C$1.00 | **(13)%** |
| Percentage change in average TTD$ equivalent of C$1.00 | **(14)%** |

(1) NIM is calculated as Net interest income divided by Average total earning assets.
(2) Efficiency ratio is calculated as Non-interest expense divided by Total revenue.
(3) Measures have been adjusted by excluding the Q3 2014 loss of $40 million related to the closing of RBC Jamaica, and the Q1 2014 loss of $60 million related to the sale of RBC Jamaica and the provision of $40 million related to post-employment benefits and restructuring charges in the Caribbean. These are non-GAAP measures. For further details, refer to the Key performance and non-GAAP measures section.
(4) Amounts have been revised from those previously presented.
(5) Average total earning assets and average loans and acceptances include average securitized residential mortgages and credit card loans for the year ended October 31, 2015 of $56.7 billion and $7.8 billion, respectively (2014 – $52.4 billion and $8.0 billion; 2013 – $48.4 billion and $7.2 billion).
(6) AUA represents period-end spot balances and includes securitized residential mortgages and credit card loans as at October 31, 2015 of $21.0 billion and $8.0 billion, respectively (October 31, 2014 – $23.2 billion and $8.0 billion; October 31, 2013 – $25.4 billion and $7.2 billion).

**2015 vs. 2014**

Net income increased $531 million or 12%. Excluding the loss last year of $100 million (before- and after-tax) related to the sale of RBC Jamaica and a provision of $40 million ($32 million after-tax) related to post-employment benefits and restructuring charges in the Caribbean, net income increased $399 million or 9%, largely reflecting solid volume growth across most businesses in Canada and strong fee-based revenue growth, and higher earnings in the Caribbean. These factors were partially offset by higher costs to support business growth and lower spreads.

Total revenue increased $583 million or 4% reflecting solid volume growth across most businesses in Canada, higher fee-based revenue primarily attributable to strong mutual funds asset growth resulting in higher mutual fund distribution fees, as well as higher balances and higher credit card transaction volumes driving higher card service revenue, and the positive impact of foreign exchange translation. These factors were partially offset by lower spreads.

Net interest margin decreased 6 bps mainly due to the low interest rate environment and competitive pressures.

PCL decreased $119 million, with the PCL ratio improving 4 bps, largely due to lower provisions in our Caribbean portfolios primarily due to provisions of $50 million on our Caribbean impaired residential mortgage portfolio included in the prior year. Lower provisions in the current year in our Canadian commercial lending portfolio also contributed to the decrease. These factors were partially offset by higher write-offs in our Canadian credit card portfolio.

Non-interest expense increased $48 million. Excluding the prior year specified items noted above, non-interest expense increased $188 million or 3%, mainly reflecting an increase due to the impact of foreign exchange translation, and higher technology and staff costs to support business growth, partially offset by continuing benefits from our efficiency management activities.

Average loans and acceptances increased $17 billion or 5%, largely due to strong growth in Canadian residential mortgages and business loans. Average deposits increased $20 billion or 7%, as a result of solid growth in both business and personal deposits.

**2014 vs. 2013**

Net income was up $95 million or 2% from 2013. Excluding the loss of $100 million (before- and after-tax) related to the sale of RBC Jamaica, and a provision of $40 million ($32 million after-tax) related to post-employment benefits and restructuring charges in the Caribbean in 2014, net income of $4,607 million was up $227 million or 5%, largely reflecting solid volume growth across most of our Canadian businesses, strong fee-based revenue growth primarily attributable to higher mutual fund distribution fees and card service revenue, and results from the full integration of Ally Canada. These factors were partially offset by higher PCL largely in the Caribbean.

Average loans and acceptances increased $14 billion or 4% from 2013, mainly due to growth in Canadian residential mortgages, business loans and personal loans. Average deposits increased $17 billion or 6% from 2013, reflecting solid growth in both personal and business deposits.

Results excluding the specified items noted above are non-GAAP measures. For further details, including a reconciliation, refer to the Key performance and non-GAAP measures section.

**In Canada, we operate through three business lines: Personal Financial Services, Business Financial Services and Cards and Payments Solutions. The following provides a discussion of our consolidated Canadian Banking results.**

**Canadian Banking financial highlights** — Table 18

| (Millions of Canadian dollars, except number of and percentage amounts and as otherwise noted) | 2015 | 2014 | 2013 |
|---|---|---|---|
| Net interest income | **$ 9,377** | $ 9,168 | $ 8,875 |
| Non-interest income | **4,002** | 3,701 | 3,345 |
| **Total revenue** | **13,379** | 12,869 | 12,220 |
| PCL | **912** | 928 | 908 |
| Non-interest expense | **5,891** | 5,687 | 5,464 |
| **Net income before income taxes** | **6,576** | 6,254 | 5,848 |
| **Net income** | **$ 4,877** | $ 4,642 | $ 4,352 |
| **Revenue by business** | | | |
| Personal Financial Services | **$ 7,634** | $ 7,285 | $ 6,948 |
| Business Financial Services | **3,091** | 3,135 | 2,990 |
| Cards and Payment Solutions | **2,654** | 2,449 | 2,282 |
| **Key ratios** | | | |
| ROE | **36.4%** | 37.0% | 37.5% |
| NIM (1) | **2.66%** | 2.71% | 2.72% |
| Efficiency ratio (2) | **44.0%** | 44.2% | 44.7% |
| Operating leverage | **0.4%** | 1.2% | (0.6)% |
| **Selected average balance sheet information** | | | |
| Total assets (3) | **$ 364,900** | $ 349,500 | $ 337,000 |
| Total earning assets (4) | **352,800** | 337,900 | 326,400 |
| Loans and acceptances (3), (4) | **358,500** | 343,100 | 329,400 |
| Deposits | **281,200** | 263,600 | 248,100 |
| **Other information** | | | |
| AUA (5) | **213,700** | 205,200 | 183,600 |
| Number of employees (FTE) (3) | **30,853** | 31,381 | 31,910 |
| Effective income tax rate | **25.8%** | 25.8% | 25.6% |
| **Credit information** | | | |
| Gross impaired loans as a % of average net loans and acceptances | **0.30%** | 0.33% | 0.36% |
| PCL on impaired loans as a % of average net loans and acceptances (3) | **0.25%** | 0.27% | 0.28% |

(1) NIM is calculated as Net interest income divided by Average total earning assets.
(2) Efficiency ratio is calculated as Non-interest expense divided by Total revenue.
(3) Amounts have been revised from those previously presented.
(4) Average total earning assets and average loans and acceptances include average securitized residential mortgages and credit card loans for the year ended October 31, 2015 of $56.7 billion and $7.8 billion, respectively (2014 – $52.4 billion and $8.0 billion; 2013 – $48.4 billion and $7.2 billion).
(5) AUA represents period-end spot balances and includes securitized residential mortgages and credit card loans as at October 31, 2015 of $21.0 billion and $8.0 billion respectively (October 31, 2014 – $23.2 billion and $8.0 billion; October 31, 2013 – $25.4 billion and $7.2 billion).

**2015 vs. 2014**

Net income increased $235 million or 5% due to solid volume growth across most businesses and strong fee-based revenue growth, partially offset by higher costs to support business growth, and lower spreads.

Total revenue increased $510 million or 4%, reflecting solid volume growth across most businesses and higher fee-based revenue primarily attributable to strong mutual fund asset growth resulting in higher mutual fund distribution fees, as well as higher credit card balances and transaction volumes driving higher card service revenue. These factors were partially offset by lower spreads.

Net interest margin decreased 5 bps compared to last year mainly due to the low interest rate environment, and competitive pressures.

PCL decreased $16 million, with the PCL ratio improving 2 bps, mostly due to lower provisions in our commercial lending portfolio, partially offset by higher write-offs in our credit card portfolio.

Non-interest expense increased $204 million or 4% mainly due to higher technology and staff costs to support business growth, partially offset by continuing benefits from our efficiency management activities.

Average loans and acceptances increased $15 billion or 4%, mainly due to strong growth in both residential mortgages and business loans. Average deposits increased $18 billion or 7%, primarily reflecting solid growth in both business and personal deposits.

**2014 vs. 2013**

Net income increased $290 million or 7% from 2013, reflecting solid volume growth of 5% across most businesses, strong fee-based revenue growth primarily attributable to mutual fund asset growth resulting in higher mutual fund distribution fees, as well as higher credit card balances and transaction volumes driving higher card service revenue, and results from the full integration of Ally Canada.

## Business line review

### Personal Financial Services

Personal Financial Services focuses on meeting the needs of our individual Canadian clients at every stage of their lives through a wide range of financing and investment products and services, including home equity financing, personal lending, deposit accounts, Canadian private banking, indirect lending (including auto financing), mutual funds and self-directed brokerage accounts, and Guaranteed Investment Certificates (GICs). We rank #1 or #2 in market share for all key personal banking products in Canada and our retail banking network is the largest in Canada with 1,275 branches and over 4,500 ATMs.

**Financial performance**
Total revenue increased $349 million or 5% compared to last year, reflecting solid volume growth across most businesses, and increased fee-based revenue primarily attributable to strong mutual fund asset growth driving higher mutual fund distribution fees.

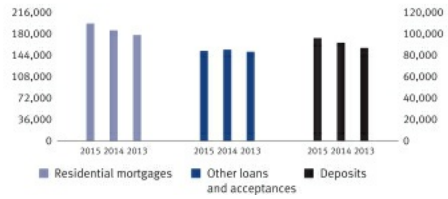
Average residential mortgages increased 6% compared to 2014, resulting from solid housing market activity supported by the continuing low interest rate environment and our targeted marketing strategy. Average other loans and acceptances decreased 2% from last year largely due to lower indirect lending volumes. Average deposits increased 5% from last year as a result of deepening our relationships with existing clients as well as strong new client acquisition.

**Selected highlights** — Table 19

| (Millions of Canadian dollars, except number of) | **2015** | 2014 | 2013 |
|---|---|---|---|
| **Total revenue** | **$ 7,634** | $ 7,285 | $ 6,948 |
| **Other information (average)** | | | |
| Residential mortgages (1) | **197,300** | 186,000 | 177,900 |
| Other loans and acceptances (1) | **84,100** | 85,400 | 83,500 |
| Deposits (1), (2) | **173,000** | 165,100 | 156,900 |
| Branch mutual fund balances (3) | **122,000** | 111,600 | 95,300 |
| AUA – Self-directed brokerage (3) | **61,400** | 60,500 | 53,300 |
| **Number of:** | | | |
| New deposit accounts opened (thousands) | **1,420** | 1,514 | 1,285 |
| Branches | **1,275** | 1,272 | 1,255 |
| ATM | **4,542** | 4,620 | 4,622 |

(1) Amounts have been revised from those previously presented.
(2) Includes GIC balances.
(3) Represents year-end spot balances.

**Average residential mortgages, personal loans and deposits**
(Millions of Canadian dollars)




### Business Financial Services

Business Financial Services offers a wide range of lending, leasing, deposit, investment, foreign exchange, cash management, auto dealer financing (floor plan), trade products and services to small, medium-sized commercial businesses, as well as agriculture and agribusiness clients across Canada. Our business banking network has the largest team of relationship managers and specialists in the industry. Our strong commitment to our clients has resulted in our leading market share in business loans and deposits.

**Financial performance**
Total revenue decreased $44 million or 1% compared to last year as strong volume growth was more than offset by spread compression reflecting competitive pressures and the impact of continuing low interest rate environment. The prior year included a favourable cumulative accounting adjustment related to deferred loan fees in our business lending portfolio.

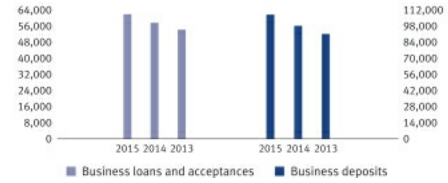
Average loans and acceptances increased 8% and average deposits were up 10%, despite a very competitive environment, due to increased activity from existing and new clients.

**Selected highlights** — Table 20

| (Millions of Canadian dollars) | **2015** | 2014 | 2013 |
|---|---|---|---|
| **Total revenue** | **$ 3,091** | $ 3,135 | $ 2,990 |
| **Other information (average)** | | | |
| Loans and acceptances (1) | **62,000** | 57,600 | 54,400 |
| Deposits (1), (2) | **108,200** | 98,500 | 91,200 |

(1) Amounts have been revised from those previously presented.
(2) Includes GIC balances.

**Average business loans and acceptances and business deposits**
(Millions of Canadian dollars)



## Cards and Payment Solutions

Cards and Payment Solutions provides a wide array of credit cards with loyalty and reward benefits, and payment products and solutions within Canada. We have over 7 million credit card accounts and have approximately 23% market share of Canada's credit card purchase volume.

In addition, this business line includes our 50% interest in Moneris Solutions, Inc., our merchant card processing joint venture with the Bank of Montreal. Moneris processes approximately $215 billion in annual credit and debit card transaction volumes.

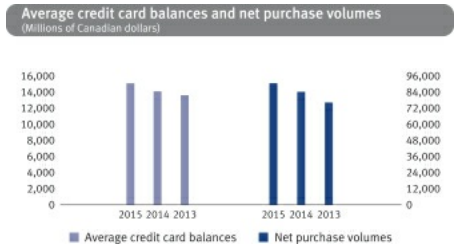
**Financial performance**

Total revenue increased $205 million or 8%, compared to last year, driven by higher balances and higher credit card transaction volumes, and improved spreads.

Average credit card balances increased 7% and net purchase volumes increased 8% due to higher active accounts driven by strength in new account acquisitions.

**Selected highlights** — Table 21

| (Millions of Canadian dollars) | 2015 | 2014 | 2013 |
|---|---|---|---|
| **Total revenue** | **$ 2,654** | $ 2,449 | $ 2,282 |
| **Other information** | | | |
| Average credit card balances | **15,100** | 14,100 | 13,600 |
| Net purchase volumes | **90,800** | 84,200 | 76,200 |




## Caribbean & U.S. Banking

Our Caribbean banking business offers a comprehensive suite of banking products and services, as well as international financing and trade promotion services through extensive branch, ATM, online and mobile banking networks.

Our U.S. cross-border banking business serves the needs of our Canadian clients within the U.S. through online and mobile channels, and offers a broad range of financial products and services to individual and business clients across all 50 states. As well, we serve the banking product needs of our U.S. wealth management clients.

**Financial performance**

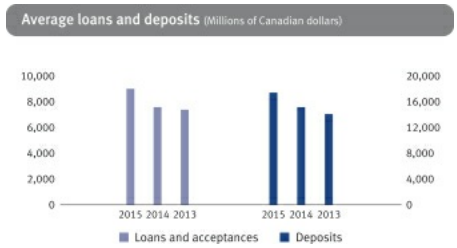
Total revenue was up $73 million or 8% from last year, primarily due to the positive impact of foreign exchange translation and the full-year impact of implementation of full service pricing in the Caribbean. These factors were partially offset by lower spreads.

Average loans and acceptances increased 18%, primarily due to the positive impact of foreign exchange translation and modest volume growth. Average deposits increased 14%, mostly due to the positive impact of foreign exchange translation.

**Selected highlights** — Table 22

| (Millions of Canadian dollars, number of and percentage amounts) | 2015 | 2014 | 2013 |
|---|---|---|---|
| **Total revenue** | **$ 934** | $ 861 | $ 799 |
| **Other information** | | | |
| Net interest margin (1) | **3.87%** | 4.29% | 4.58% |
| Average loans and acceptances (1) | **$ 9,000** | $ 7,600 | $ 7,400 |
| Average deposits | **17,400** | 15,200 | 14,100 |
| AUA | **9,800** | 9,000 | 8,600 |
| AUM | **4,800** | 4,000 | 3,400 |
| **Number of:** | | | |
| Branches | **79** | 93 | 116 |
| ATM | **274** | 309 | 351 |

(1) Amounts have been revised from those previously presented.



## Wealth Management

Wealth Management comprises Canadian Wealth Management, U.S. & International Wealth Management and Global Asset Management (GAM). Wealth Management serves individual and institutional clients in target markets around the world. From our offices in key financial centres mainly in Canada, the U.S., the U.K., Channel Islands, and Asia, Wealth Management offers a comprehensive suite of investment, trust, banking, credit and other wealth management solutions to affluent, high net worth (HNW), and ultra-high net worth (UHNW) clients. Our asset management group, Global Asset Management, which includes BlueBay Asset Management (BlueBay), is an established global leader in investment management services, providing investment strategies and fund solutions directly to institutional investors and also to individual clients through our distribution channels and third-party distributors. On November 2, 2015, we completed the acquisition of City National, which will enhance and complement our existing U.S. businesses and product offerings.

**Economic and market review**

Economic activity in Canada and the U.S. slowed during the early part of fiscal 2015, although the U.S. economy started to recover more quickly than the Canadian economy in the latter part of the year. Despite this stalled economic activity, we continued to see growth in our average fee-based client assets through capital appreciation and net sales. The Euro area economy grew marginally during the fiscal year, leading the ECB to implement a highly stimulative monetary policy to help restore investor confidence and stimulate economic activity in the region. Global capital markets remained volatile throughout the year, leading to lower transaction volumes during the year. In addition, heightened regulation has driven up compliance and technology costs.

**Highlights**

- Capital appreciation and strong net sales continued to drive client assets higher, which surpassed $1.2 trillion this year.
- We continued to grow and invest in our high-performing asset management business and maintained a leading market share of 14.5% of the Canadian mutual fund asset management industry. We continued to increase BlueBay's distribution footprint with institutional clients and expand our international distribution capabilities to U.S. and international institutional clients and professional buyers.
- In Canada, our full service private wealth business is the industry leader. We continue to extend our leadership amongst HNW clients by focusing on delivering comprehensive value to our clients, leveraging our expertise around business owners, succession and wealth planning.
- In the U.S., our second home market, we are among the top 10 full service brokerage firms in terms of assets and number of advisors, and we continue to focus on improving advisor productivity. Furthermore, our recent acquisition of City National will enhance our U.S. product offering.
- Outside Canada and the U.S., we continued to realign our International Wealth Management business to focus on key client segments, including HNW and UHNW clients in select target markets, while enhancing our product offering and operating environment, creating a scalable and profitable business aligned to a more conservative risk profile.
- The strength of our global capabilities and continued commitment to deliver integrated global wealth management advice, solutions and services to HNW and UHNW clients helped us earn significant industry awards. We were ranked or named:
  - For the second year in a row, we ranked 5 th largest global wealth manager by client assets ( *Scorpio Partnership's 2015 Global Private Banking KPI Benchmark* )
  - Best Private Banking services overall for an eighth consecutive year in Canada and Best Private Banking services overall for the second year in a row in Jersey ( *Euromoney*)
  - A top 50 Global Asset Manager ( *Pensions & Investments* / *Towers Watson*)
  - Best Bank-owned Brokerage Firm in Canada ( *International Executive Brokerage Report Card*)
  - Trust Company of the Year ( *Society of Trust and Estate Practitioners*)
  - RBC Wealth Management® and RBC Asset Management® brand was recognized as the 8 th best banking brand globally ( *Brand Finance Banking 500*)

**Outlook and priorities**

Global market volatility, investor uncertainty and low interest rates are expected to continue into 2016. Despite the overall economic uncertainty and volatile equity markets, we expect global private wealth to continue to grow driven by growth in the HNW client segment. Our revenue is expected to increase mainly due to higher client assets. We will continue to leverage our brand, reputation, and financial strength to increase our market share of HNW and UHNW globally. In addition, changing demographics and rapid advancements in digitization are expected to drive an accelerated pace of change, requiring a greater focus on delivering a digitally-integrated, multi-channel experience for our clients and client-facing professionals.

For further details on our general economic review and outlook, refer to the Economic and market review and outlook section.

*Key strategic priorities for 2016*

- Leverage and grow our high performing asset management business globally.
- Deepen client relationships by bringing the best of RBC to our clients, leveraging the RBC enterprise brand, capabilities and competitive strengths.
- Focus on developing a differentiated client experience tailored to key HNW and UHNW client segments in our priority markets, with a greater emphasis on digital enablement.
- Drive sustainable growth in our international wealth business by enhancing our solution offering and achieving a more scalable and streamlined operating model.
- Leverage the combined strengths of City National and RBC U.S. Wealth Management to create a powerful and scalable engine for growth in the U.S.

**Wealth Management** — Table 23

| (Millions of Canadian dollars, except number of and percentage amounts and as otherwise noted) | 2015 | 2014 | 2013 |
|---|---|---|---|
| Net interest income | $ 493 | $ 469 | $ 396 |
| Non-interest income | | | |
| Fee-based revenue | 4,699 | 4,185 | 3,463 |
| Transactional and other revenue | 1,583 | 1,659 | 1,628 |
| **Total revenue** | 6,775 | 6,313 | 5,487 |
| PCL | 46 | 19 | 51 |
| Non-interest expense | 5,292 | 4,800 | 4,219 |
| **Net income before income taxes** | 1,437 | 1,494 | 1,217 |
| **Net income** | $ 1,041 | $ 1,083 | $ 886 |
| **Revenue by business** | | | |
| Canadian Wealth Management | $ 2,226 | $ 2,186 | $ 1,889 |
| U.S. & International Wealth Management | 2,729 | 2,430 | 2,225 |
| U.S. & International Wealth Management (US$ millions) | 2,181 | 2,221 | 2,174 |
| Global Asset Management (1) | 1,820 | 1,697 | 1,373 |
| **Key ratios** | | | |
| ROE | 17.4% | 19.2% | 15.8% |
| Pre-tax margin (2) | 21.2% | 23.7% | 22.2% |
| **Selected average balance sheet information** | | | |
| Total assets | $ 29,100 | $ 25,800 | $ 21,600 |
| Loans and acceptances | 17,700 | 15,700 | 12,100 |
| Deposits | 39,500 | 36,200 | 31,900 |
| Attributed capital | 5,900 | 5,500 | 5,400 |
| **Other information** | | | |
| Revenue per advisor (000s) (3) | $ 1,089 | $ 983 | $ 862 |
| AUA (4) | 749,700 | 717,500 | 639,200 |
| AUM (4) | 492,800 | 452,300 | 387,200 |
| Average AUA | 755,600 | 690,500 | 609,500 |
| Average AUM | 484,700 | 427,800 | 367,600 |
| Number of employees (FTE) | 12,598 | 12,919 | 12,462 |
| Number of advisors (5) | 3,954 | 4,245 | 4,216 |

**Estimated impact of U.S. dollar, British pound and Euro translation on key income statement items**

| (Millions of Canadian dollars, except percentage amounts) | 2015 vs. 2014 |
|---|---|
| *Increase (decrease):* | |
| Total revenue | $ 301 |
| Non-interest expense | 263 |
| Net income | 19 |
| Percentage change in average US$ equivalent of C$1.00 | (13)% |
| Percentage change in average British pound equivalent of C$1.00 | (6)% |
| Percentage change in average Euro equivalent of C$1.00 | 4% |

(1) Effective the first quarter of 2014, we have aligned the reporting period of BlueBay, which resulted in an additional month of earnings being included in 2014.
(2) Pre-tax margin is defined as net income before income taxes divided by Total revenue.
(3) Represents investment advisors and financial consultants of our Canadian and U.S. full-service wealth businesses.
(4) Represents year-end spot balances.
(5) Represents client-facing advisors across all our wealth management businesses.

**Client assets – AUA** — Table 24

| (Millions of Canadian dollars) | 2015 | 2014 |
|---|---|---|
| AUA, beginning balance | $ 717,500 | $ 639,200 |
| Net asset flows | (30,600) | 16,300 |
| Market impact and other | 62,800 | 62,000 |
| **AUA, balance at end of year** | $ 749,700 | $ 717,500 |

**Client assets – AUM** — Table 25

| (Millions of Canadian dollars) | 2015 | 2014 |
|---|---|---|
| AUM, beginning balance | $ 452,300 | $ 387,200 |
| Net asset flows: | | |
| Money market | (4,900) | (5,600) |
| Fixed income | 8,800 | 14,000 |
| Equity | 900 | 4,100 |
| Multi-asset and other | 13,400 | 16,900 |
| Market impact and other | 22,300 | 35,700 |
| **AUM, balance at end of year** | $ 492,800 | $ 452,300 |

**AUA by geographic mix and asset class** — Table 26

| (Millions of Canadian dollars) | 2015 | 2014 |
|---|---|---|
| **Canada** (1) | | |
| Money Market | **$ 21,500** | $ 21,600 |
| Fixed Income | **34,900** | 38,700 |
| Equity | **79,800** | 83,200 |
| Multi-asset and other | **157,400** | 147,300 |
| **Total Canada** | **$ 293,600** | $ 290,800 |
| **U.S.** (1) | | |
| Money Market | **$ 32,900** | $ 28,500 |
| Fixed Income | **90,800** | 82,500 |
| Equity | **152,700** | 138,200 |
| Multi-asset and other | **6,400** | 3,900 |
| **Total U.S.** | **$ 282,800** | $ 253,100 |
| **Other International** (1) | | |
| Money Market | **$ 24,500** | $ 25,900 |
| Fixed Income | **26,500** | 33,800 |
| Equity | **93,300** | 89,200 |
| Multi-asset and other | **29,000** | 24,700 |
| **Total International** | **$ 173,300** | $ 173,600 |
| **Total AUA** | **$ 749,700** | $ 717,500 |

(1) Geographic information is based on the location from where our clients are serviced.

**Financial performance**

**2015 vs. 2014**

Net income decreased $42 million or 4% compared to last year, primarily reflecting higher costs in support of business growth in our Global Asset Management and Canadian Wealth Management businesses, restructuring costs of $122 million ($90 million after-tax) largely related to our U.S. & International Wealth Management business, lower transaction volumes, and higher PCL. These factors were partly offset by higher earnings from growth in average fee-based client assets.

Total revenue increased $462 million or 7%, mainly due to growth in average fee-based client assets resulting from capital appreciation and net sales, and the positive impact of foreign exchange translation. These factors were partly offset by lower transaction volumes.

PCL increased $27 million mainly due to provisions related to our U.S. & International Wealth Management business.

Non-interest expense increased $492 million or 10%, mainly reflecting an increase due to the impact of foreign exchange translation, higher costs in support of business growth in our Global Asset Management and Canadian Wealth Management businesses, and the restructuring costs noted above.

**2014 vs. 2013**

Net income increased $197 million or 22% from 2013, mainly due to higher earnings from growth in average fee-based client assets resulting from capital appreciation and strong net sales, and lower PCL.

## Business line review

### Canadian Wealth Management

Canadian Wealth Management includes our full-service Canadian wealth advisory business, which is the largest in Canada as measured by AUA, with over 1,600 investment advisors providing comprehensive advice-based financial solutions to affluent, HNW and UHNW clients. Additionally, we provide discretionary investment management and estate and trust services to our clients through approximately 65 investment counsellors and 91 trust professionals across Canada.

We compete with domestic banks and trust companies, investment counselling firms, bank-owned full service brokerages and boutique brokerages, mutual fund companies and global private banks. In Canada, bank-owned wealth managers continue to be the major players.

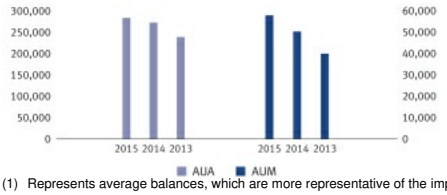
**Financial performance**
Revenue increased $40 million or 2% from a year ago, mainly due to higher fee-based client assets reflecting net sales and capital appreciation, partly offset by lower transaction volumes, reflecting challenging market conditions in the second half of the year.

**Selected highlights** — Table 27

| (Millions of Canadian dollars) | 2015 | 2014 | 2013 |
|---|---|---|---|
| **Total revenue** | **$ 2,226** | $ 2,186 | $ 1,889 |
| **Other information** | | | |
| Total loans and acceptances (1) | **1,500** | 3,000 | 2,500 |
| Total deposits (1) | **13,600** | 15,300 | 13,400 |
| AUA | **287,800** | 285,100 | 251,400 |
| AUM | **60,800** | 55,400 | 43,600 |
| Average AUA | **284,300** | 272,900 | 239,100 |
| Average AUM | **58,100** | 50,400 | 40,000 |
| Total assets under fee-based programs | **182,000** | 166,700 | 139,400 |

(1) Represents an average amount, which is calculated using methods intended to approximate the average of the daily balances for the period.

**Average AUA and AUM** (1) (Millions of Canadian dollars)




(1) Represents average balances, which are more representative of the impact client balances have upon our revenue.

## U.S. & International Wealth Management

U.S. Wealth Management includes our private client group, which is the 8th largest full service wealth advisory firm in the U.S., as measured by number of advisors, with over 1,800 financial advisors. Additionally, our correspondent and advisor services businesses deliver clearing and execution services for small to mid-sized independent broker-dealers and registered investment advisor firms. In the U.S., we operate in a fragmented and extremely competitive industry. There are approximately 4,000 registered broker-dealers in the U.S., comprising independent, regional and global players. As previously announced, we completed the acquisition of City National on November 2, 2015, and we are combining U.S. Wealth Management and City National into one line of business effective the first quarter of 2016.

International Wealth Management includes Wealth Management – International and Wealth Management – Asia. We provide customized and integrated trust, banking, credit and investment solutions to HNW and UHNW clients and corporate clients with over 1,400 employees located in 16 countries around the world. Competitors to our International Wealth Management business comprise global wealth managers, traditional offshore private banks, domestic wealth managers and U.S. investment-led private client operations. In the fourth quarter of 2014, we announced a restructuring program designed to transform our global businesses into sustainable and profitable businesses aligned with a conservative risk profile.

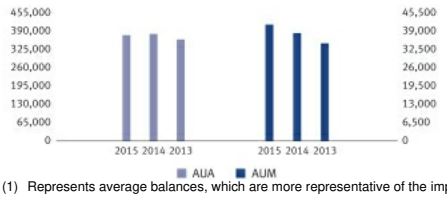
**Financial performance**
Revenue increased $299 million or 12% from a year ago. In U.S. dollars, revenue decreased $40 million or 2%, mainly reflecting the impact of the restructuring of our U.S. & International Wealth Management business, lower transaction volumes, and a change in the fair value of our U.S. share-based compensation plan.

**Selected highlights** — Table 28

| (Millions of Canadian dollars, except otherwise noted) | 2015 | 2014 | 2013 |
|---|---|---|---|
| **Total revenue** | **$ 2,729** | $ 2,430 | $ 2,225 |
| **Other information (Millions of U.S. dollars)** | | | |
| Total revenue | **2,181** | 2,221 | 2,174 |
| Total loans, guarantees and letters of credit (1) | **15,100** | 14,500 | 12,100 |
| Total deposits (1) | **20,700** | 19,100 | 18,000 |
| AUA | **353,500** | 383,700 | 371,900 |
| AUM | **38,500** | 41,100 | 35,600 |
| Average AUA | **376,500** | 382,000 | 361,800 |
| Average AUM | **41,500** | 38,400 | 34,700 |
| Total assets under fee-based programs (2) | **94,500** | 94,500 | 83,200 |

(1) Represents an average amount, which is calculated using methods intended to approximate the average of the daily balances for the period.
(2) Represents amounts related to our U.S. wealth management businesses.

**Average AUA and AUM** (1) (Millions of U.S. dollars)




(1) Represents average balances, which are more representative of the impact client balances have upon our revenue.

## Global Asset Management

Global Asset Management provides global investment management services and solutions for individual and institutional investors in Canada, the U.S., the U.K., Europe and Asia. We provide a broad range of investment management services through mutual, pooled and private funds, fee-based accounts and separately managed portfolios. We distribute our investment solutions through a broad network of bank branches, our self-directed and full service wealth advisory businesses, independent third-party advisors and private banks, and directly to individual clients. We also provide investment solutions directly to institutional clients, including pension plans, insurance companies, corporations, and endowments and foundations.

We are the largest retail fund company in Canada as well as a leading institutional asset manager. We face competition in Canada from banks, insurance companies, asset management organizations and boutique firms. The Canadian fund management industry is large and mature, but still a relatively fragmented industry.

In the U.S., our asset management business offers investment management solutions and services primarily to institutional investors and competes with independent asset management firms, as well as those that are part of national and international banks, and insurance companies.

Internationally, through our leading global capabilities of BlueBay and RBC Global Asset Management®, we offer investment management solutions for institutions and, through private banks including RBC Wealth Management, to HNW and UHNW investors. We face competition from asset managers that are part of international banks as well as national, regional and boutique asset managers in the geographies where we serve clients.

**Financial performance**

Revenue increased $123 million or 7% from a year ago, mainly due to an increase of 9% in AUM reflecting strong net sales and capital appreciation, and the positive impact of foreign exchange translation, partly offset by net redemptions in our emerging markets funds.

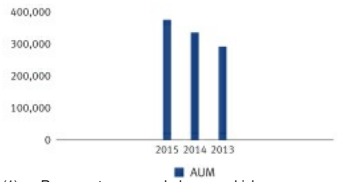
**Selected highlights** — Table 29

| (Millions of Canadian dollars) | 2015 | 2014 | 2013 |
|---|---|---|---|
| **Total revenue** (1) | **$ 1,820** | $ 1,697 | $ 1,373 |
| **Other information** | | | |
| Canadian net long-term mutual fund sales (2) | **9,857** | 10,982 | 8,064 |
| Canadian net money market mutual fund (redemptions) sales (2) | **(605)** | (1,229) | (1,348) |
| AUM | **381,700** | 350,600 | 306,500 |
| Average AUM | **374,700** | 335,300 | 292,100 |

(1) Effective the first quarter of 2014, we have aligned the reporting period of BlueBay, which resulted in an additional month of earnings being included in 2014.

(2) As reported to the Investment Funds Institute of Canada. Includes all prospectus-based mutual funds across our Canadian Global Asset Management businesses.

**Average AUM** (1) (Millions of Canadian dollars)




(1) Represents average balances, which are more representative of the impact client balances have upon our revenue.

## Insurance

Insurance comprises our operations in Canada and globally and operates under two business lines: Canadian Insurance and International Insurance, providing a wide range of life, health, home, auto, travel, wealth, group and reinsurance products and solutions. In Canada, we offer our products and services through our proprietary distribution channels, comprised of the field sales force which includes retail insurance stores, our field sales representatives, advice centres and online, as well as through independent insurance advisors and affinity relationships. Outside Canada, we operate in reinsurance markets globally offering life, accident and annuity reinsurance products. Our competitive environment is discussed below in each business.

**Economic and market review**

The global insurance industry has adjusted to the effects of the economic crisis such as slow economic growth rates, persistently low interest rates and low inflation rates, and continues to stabilize. The approach of many insurance companies has been to review product features/pricing, conserve capital and reduce expenses. Although these factors continue to put strain on our businesses, product and pricing actions we have taken in recent years, a migration to lower-cost proprietary distribution channels, conservative investment practices and diversified product lines have allowed us to continue to navigate this challenging environment. In addition, recent tax legislation impacting certain foreign affiliates, which became effective on November 1, 2014, has had a negative effect on our financial results.

**Highlights**

- Ranked as the #1 Banking-based Insurance brand globally, according to the 2015 Brand Finance Banking 500. The annual study, conducted by Brand Finance, ranks the world's biggest banks by their brand value, which reflects the premium generated by the brand in the industry.
- We introduced Pension Plan De-Risking Solutions. Our first offering, Group Annuities, will help employers simplify the management of their defined benefit pension plans. We are leveraging the strengths of partners across RBC to deliver the solution, bringing the best of RBC to our clients.
- Our Reinsurance business has achieved steady growth, ranking us as the 3rd largest life retrocessionaire and we continue to be active in the U.K. annuity longevity reinsurance market.

**Outlook and priorities**

Overall, moderate growth in the industry is projected over the short to medium term. We expect continued organic business growth as a result of the product and pricing actions taken during the last few years, including increasing volumes through our growing proprietary channels and through our ongoing focus on expense efficiency.

For further details on our general economic review and outlook, refer to the Economic and market review and outlook section.

*Key strategic priorities for 2016*

- Deepen client relationships through cross-selling by continuing to provide our customers with a comprehensive suite of insurance products and services based on their unique family needs.
- Continue to improve our proprietary channels distribution efficiency through enhancements to performance management processes, a proactive sales culture and enhanced cross-selling initiatives.
- Continue to simplify the way we do business by streamlining all business processes while diligently managing our expenses.
- Pursue select international opportunities, within our risk appetite, with the aim of continuing to grow our core reinsurance business.

| Insurance | | | Table 30 |
|---|---|---|---|
| (Millions of Canadian dollars, except percentage amounts and as otherwise noted) | **2015** | 2014 | 2013 |
| Non-interest income | | | |
| Net earned premiums | **$ 3,507** | $ 3,742 | $ 3,674 |
| Investment income (1) | **445** | 938 | (17) |
| Fee income | **484** | 284 | 271 |
| **Total revenue** | **4,436** | 4,964 | 3,928 |
| Insurance policyholder benefits and claims (1) | **2,741** | 3,194 | 2,326 |
| Insurance policyholder acquisition expense | **222** | 379 | 458 |
| Non-interest expense | **613** | 579 | 551 |
| **Net income before income taxes** | **860** | 812 | 593 |
| **Net income** | **$ 706** | $ 781 | $ 595 |
| **Revenue by business** | | | |
| Canadian Insurance | **$ 2,725** | $ 2,911 | $ 1,962 |
| International Insurance | **1,711** | 2,053 | 1,966 |
| **Key ratios** | | | |
| ROE | **44.3%** | 49.7% | 41.4% |
| **Selected average balance sheet information** | | | |
| Total assets | **$ 13,700** | $12,000 | $ 11,900 |
| Attributed capital | **1,600** | 1,550 | 1,400 |
| **Other information** | | | |
| Premiums and deposits (2) | **$ 5,016** | $ 5,164 | $ 4,924 |
| Canadian Insurance | **2,725** | 2,419 | 2,344 |
| International Insurance | **2,291** | 2,745 | 2,580 |
| Insurance claims and policy benefit liabilities | **9,110** | 8,564 | $ 8,034 |
| Fair value changes on investments backing policyholder liabilities (1) | **(24)** | 439 | (491) |
| Embedded value (3) | **6,952** | 6,239 | 6,302 |
| AUM | **800** | 700 | 500 |
| Number of employees (FTE) | **3,163** | 3,126 | 2,965 |

**Estimated impact of U.S. dollar and British pound translation on key income statement items**

| (Millions of Canadian dollars, except percentage amounts) | 2015 vs. 2014 |
|---|---|
| *Increase (decrease):* | |
| Total revenue | **$ 68** |
| PBCAE | **75** |
| Non-interest expense | **–** |
| Net income | **(7)** |
| Percentage change in average US$ equivalent of C$1.00 | **(13)%** |
| Percentage change in average British pound equivalent of C$1.00 | **(6)%** |

(1) Investment income can experience volatility arising from fluctuation of fair value through profit or loss (FVTPL) assets. The investments which support actuarial liabilities are predominantly fixed income assets designated as at FVTPL. Consequently, changes in the fair values of these assets are recorded in investment income in the consolidated statement of income and are largely offset by changes in the fair value of the actuarial liabilities, the impact of which is reflected in insurance policyholder benefits and claims.
(2) Premiums and deposits include premiums on risk-based insurance and annuity products, and individual and group segregated fund deposits, consistent with insurance industry practices.
(3) Embedded value is defined as the sum of value of equity held in our Insurance segment and the value of in-force business (existing policies). For further details, refer to the Key performance and non-GAAP measures section.

**Financial performance**

**2015 vs. 2014**

Net income decreased $75 million or 10%, mainly due to a change in Canadian tax legislation impacting certain foreign affiliates which became effective November 1, 2014, a lower level of favourable actuarial adjustments in the current year, and higher net claims costs. These factors were partially offset by higher earnings from new U.K. annuity contracts, and a favourable impact of investment-related activities on the Canadian life business.

Total revenue decreased $528 million or 11%, mainly due to a reduction of $463 million related to the change in fair value of investments backing our policyholder liabilities resulting from changes in long-term interest rates, and a reduction of revenue related to our retrocession contracts, both of which were largely offset in PBCAE. These factors were partially offset by business growth in Canadian and International insurance, and the positive impact of foreign exchange translation.

PBCAE decreased $610 million or 17%, mainly due to a reduction of PBCAE related to our retrocession contracts, and the change in fair value of investments backing our policyholder liabilities, both of which were largely offset in revenue. These factors were partially offset by business growth as noted above, a lower level of favourable actuarial adjustments reflecting management actions and assumption changes, and an increase due to the impact of foreign exchange translation.

Non-interest expense increased $34 million or 6%, mainly due to higher costs to support business growth as well as increased costs related to strategic initiatives.

Premiums and deposits were down $148 million or 3%, as the reduction related to our retrocession contracts was partly offset by business growth in International and Canadian Insurance.

Embedded value increased $713 million, reflecting business growth mainly in International Insurance, a favourable change in interest rate assumptions, and the impact of foreign exchange translation. In addition, the transfer of capital through dividend payments from our insurance businesses was lower compared to the prior year. For further details, refer to the Key performance and non-GAAP measures section.

**2014 vs. 2013**
Net income increased $186 million or 31% from 2013, mainly due to lower net claims costs, business growth in our European life and U.K. annuity products, and favourable actuarial adjustments reflecting management actions and assumption changes. Our results in 2013 included a charge of $160 million ($118 million after-tax) as a result of new tax legislation in Canada, which affects the policyholders' tax treatment of certain individual life insurance policies, and a favourable impact from investment-related activities on the Canadian life business.

## Business line review

### Canadian Insurance

We offer life, health, property and casualty insurance products, as well as wealth accumulation solutions, to individual and group clients across Canada. Our life and health portfolio includes universal life, term life, critical illness, disability, long-term care insurance and group benefits. We offer a wide range of property and casualty products including home, auto and travel insurance. Our travel products include out of province/country medical coverage, and trip cancellation and interruption insurance.

In Canada, we compete against over 200 insurance companies, with the majority of the organizations specializing in either life and health, or property and casualty products. We hold a leading market position in disability insurance products, have a significant presence in life and travel products, and have a growing presence in the home, auto and wealth markets.

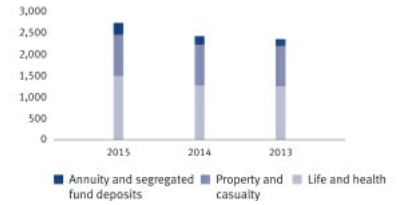
**Financial performance**
Total revenue decreased $186 million or 6% from last year, mainly due to the change in fair value of investments backing our policyholder liabilities resulting from changes in long-term interest rates, largely offset in PBCAE. This factor was partially offset by business growth in our life, health, home and auto insurance businesses.

Premiums and deposits increased $306 million or 13% reflecting business growth.

**Selected highlights** — Table 31

| (Millions of Canadian dollars) | 2015 | 2014 | 2013 |
|---|---|---|---|
| **Total revenue** | **$ 2,725** | $ 2,911 | $ 1,962 |
| **Other information** | | | |
| Premiums and deposits | | | |
| Life and health | **1,484** | 1,266 | 1,245 |
| Property and casualty | **958** | 951 | 942 |
| Annuity and segregated fund deposits | **283** | 202 | 157 |
| Fair value changes on investments backing policyholder liabilities | **54** | 490 | (510) |

**Premiums and deposits** (Millions of Canadian dollars)




### International Insurance

International Insurance is primarily comprised of our reinsurance businesses which insure risks of other insurance and reinsurance companies. We offer life and health, accident and annuity reinsurance products.

The global reinsurance market is dominated by a few large players, with significant presence in the U.S., the U.K. and the Euro area. The reinsurance industry is competitive but barriers to entry remain high.

**Financial performance**
Total revenue decreased $342 million or 17%, mainly due to a reduction of revenue related to our retrocession contracts, largely offset in PBCAE. These factors were partially offset by business growth in our International life and U.K. annuity products and a positive impact of foreign exchange translation.

Premiums and deposits decreased $454 million, or 17% driven by the reduction related to our retrocession contracts, partially offset by business growth.

**Selected highlights** — Table 32

| (Millions of Canadian dollars) | 2015 | 2014 | 2013 |
|---|---|---|---|
| **Total revenue** | **$ 1,711** | $ 2,053 | $ 1,966 |
| **Other information** | | | |
| Premiums and deposits | | | |
| Life and health | **1,483** | 2,128 | 2,069 |
| Property and casualty | **(4)** | 6 | 50 |
| Annuity | **812** | 611 | 461 |

## Investor & Treasury Services

Investor & Treasury Services is a specialist provider of asset and treasury services, custody, payments, and transaction banking for financial institutions and other institutional investors worldwide. We deliver custodial, fund accounting, financing and other services to safeguard client assets, maximize liquidity and manage risk across multiple jurisdictions. We also provide short-term funding and liquidity management for RBC. We are a global custodian with a network of offices across North America, Europe and Asia-Pacific. While we compete against the world's largest global custodians, we remain a specialist provider with a focus on asset managers. Our transaction banking business competes primarily with major Canadian banks.

**Economic and market review**

The highly competitive environment in the global custody industry continued to pressure margins. Low to negative interest rates globally have reduced deposit rates, leading to margin compression from deposit-gathering. Moreover, heightened regulation has driven up compliance and technology costs. However, in the first nine months of the fiscal year, increased client activity and heightened market volatility benefited our foreign exchange forwards business, drove higher transaction volumes, grew our core fees and benefited deposit growth.

**Highlights**

- Rated by our clients the #1 global custodian for five consecutive years *(Global Custody Survey, Global Investor ISF)* .
- Leading offshore provider in Luxembourg and Dublin, and rated UCITS Fund Administrator of the Year. *(Custody Risk, European Awards, 2015)*.
- Canada's leading asset management provider with number one ratings across client service, custody, fund administration and Canadian dollar transactions *(Global Custody Survey, Global Investor ISF, 2015).*
- High level of investment in client-focused technology solutions.

**Outlook and priorities**

In 2016, our aim is to continue to be the leading provider of custody, asset services and cash management in Canada and a leading provider of fund services in select offshore markets. Our focus is on driving top-line growth by leveraging our leadership position in Canada and capabilities in Luxembourg and Ireland to win new business and deepen relationships with existing clients. We are continuing to execute on strategic, transformational initiatives to deliver and enhance client experience. While we expect the global custody industry to remain challenging in the near-term, we are well-positioned to compete in the continuously changing operating environment.

For further details on our general economic review and outlook, refer to the Economic and market review and outlook section.

*Key strategic priorities for 2016*

- Maintain our leadership position in Canada.
- Leverage the strength of our leading offshore service offering in Luxembourg and Ireland.
- Increase investment in client-focused technology solutions.
- Evolve our business model to enhance client service and improve efficiency.
- Maintain prudent risk management, exercise sound judgment, and awareness of key issues.
- Continue to invest in talent management and employee training and development.
- Leverage Investor & Treasury Services expertise in liquidity management in support of our growth strategies.

| Investor & Treasury Services | | | Table 33 |
|---|---|---|---|
| (Millions of Canadian dollars, except percentage amounts and as otherwise noted) | **2015** | 2014 | 2013 |
| Net interest income | **$ 818** | $ 732 | $ 671 |
| Non-interest income | **1,220** | 1,152 | 1,133 |
| **Total revenue** (1) | **2,038** | 1,884 | 1,804 |
| Non-interest expense | **1,300** | 1,286 | 1,348 |
| **Net income before income taxes** | **738** | 598 | 456 |
| **Net income** | **$ 556** | $ 441 | $ 339 |
| **Key Ratios** | | | |
| ROE | **20.3%** | 19.8% | 16.5% |
| **Selected average balance sheet information** | | | |
| Total assets | **$ 125,300** | $ 94,200 | $ 83,100 |
| Deposits | **139,600** | 112,100 | 104,300 |
| Client deposits | **50,400** | 42,700 | 36,100 |
| Wholesale funding deposits | **89,200** | 69,400 | 68,200 |
| Attributed capital | **2,700** | 2,150 | 2,000 |
| **Other Information** | | | |
| AUA (2) | **3,620,300** | 3,702,800 | 3,208,800 |
| Average AUA | **3,793,000** | 3,463,000 | 3,052,600 |
| Number of employees (FTE) | **4,774** | 4,963 | 5,208 |

**Estimated impact of U.S. dollar, British pound and Euro translation on key income statement items**

| (Millions of Canadian dollars, except percentage amounts) | **2015 vs. 2014** |
|---|---|
| *Increase (decrease):* | |
| Total revenue | **$ (9)** |
| Non-interest expense | **(9)** |
| Net income | **(1)** |
| Percentage change in average US$ equivalent of C$1.00 | **(13)%** |
| Percentage change in average British pound equivalent of C$1.00 | **(6)%** |
| Percentage change in average Euro equivalent of C$1.00 | **4%** |

(1) Effective the third quarter of 2015, we have aligned the reporting period of Investor Services, which resulted in an additional month of earnings being included in 2015. The net impact of the additional month was recorded in revenue.

(2) Represents period-end spot balances.

**Financial performance**

**2015 vs. 2014**

Net income increased $115 million or 26%, primarily due to increased client activity in our foreign exchange forwards business and higher foreign exchange transaction volumes, an additional month of earnings in Investor Services of $42 million ($28 million after-tax), increased custodial fees, and higher earnings from growth in client deposits. These factors were partially offset by lower funding and liquidity results.

Total revenue increased $154 million or 8%, mainly related to higher revenue from our foreign exchange forwards business and higher foreign exchange transaction volumes reflecting increased client activity through the first nine months of the year primarily due to market volatility, an additional month of revenue in Investor Services as noted above, higher custodial fees, and higher net interest income reflecting growth in client deposits. These factors were partially offset by lower funding and liquidity results due to widening credit spreads and unfavourable market conditions.

Non-interest expense increased $14 million or 1%, largely reflecting continuing benefits from our efficiency management activities.

**2014 vs. 2013**

Net income was up $102 million from 2013, largely due to benefits from our efficiency management activities and higher earnings from growth in client deposits. In addition, results in 2013 included a restructuring charge of $44 million ($31 million after-tax) related to the integration of Investor Services.

## Capital Markets

Capital Markets provides public and private companies, institutional investors, governments and central banks globally with a wide range of capital markets products and services across our two main business lines, Corporate and Investment Banking and Global Markets. Our legacy portfolio is grouped under Other.

In North America, we offer a full suite of products and services which include corporate and investment banking, equity and debt origination and distribution, and structuring and trading. In Canada, we compete mainly with Canadian banks where we are the premier global investment bank and market leader with a strategic presence in all lines of capital markets businesses. In the U.S., we have full industry sector coverage and investment banking product range and compete with large U.S. and global investment banks as well as smaller regional firms. Outside North America, we have a select presence in the U.K. and Europe, and Other international, where we offer a diversified set of capabilities in our key sectors of expertise such as energy, mining and infrastructure and we have expanded into industrial, consumer and health care in Europe. In the U.K. and Europe, we compete in our key sectors of expertise with global and regional investment banks. In Other international, we compete with global and regional investment banks in select products, consisting of fixed income distribution and currencies trading and corporate and investment banking in Australia, Asia, and the Caribbean.

**Economic and market review**

Global capital markets improved in the first half of fiscal 2015, which contributed to solid Global Markets and Corporate and Investment Banking results. However, market conditions deteriorated throughout the latter half of fiscal 2015, reflecting increased market volatility, primarily due to

the effect of low global oil and commodity prices and diverging monetary policies amongst global central banks, which led to decreased levels of client activity and volumes. Our corporate and investment banking businesses performed well, reflecting economic growth, particularly in the U.S., the low interest rate environment, and our continued focus on origination and increased activity from client-focused strategies. Our equity and fixed income trading businesses performed well, largely reflecting strong results in the first half of fiscal 2015, although markets were challenged throughout the latter half of the year due to increased market volatility.

**Highlights**

- We continued to focus on the efficient deployment of our capital and growth in our corporate and investment banking businesses, particularly in the U.S. and Europe. We re-allocated capital from trading to corporate and investment banking businesses and managed risks by narrowing the focus of our trading products.
- In Canada, we maintained our market leadership by deepening our existing client relationships despite challenges in both the energy and commodity sectors, gaining new clients by leveraging our strong cross-border capabilities and improving collaboration with Wealth Management to drive operational efficiencies, and offering a full suite of global capabilities. We continued to win significant mandates including acting as exclusive financial advisor to Enbridge Inc. on the transfer of its Canadian liquids pipeline and renewable energy assets, valued at $30.4 billion, to its partially owned, publicly traded subsidiary Enbridge Income Fund.
- In the U.S., we continued to leverage our key strategic investments made in recent years to expand our corporate and investment banking businesses. We successfully positioned our lending relationships as we continued to focus on origination and increased activity from client-focused strategies. We exited certain proprietary trading strategies in 2014 and continue to ensure that any remaining strategies comply with the Volcker Rule. We continued growing our businesses and won several significant mandates including acting as joint bookrunner on the acquisition financing supporting Permira Advisers Ltd. and the Canadian Pension Plan Investment Board's US$5.3 billion acquisition of Informatica Corporation, as well as acting as lead financial advisor to Raytheon, one of the world's largest global defense contractors, on its announced definitive agreement with Vista Equity Partners to form a new, jointly owned entity valued at US$2.3 billion.
- In the U.K. and Europe, we continued to expand our corporate and investment banking businesses. We won new mandates including acting as advisor to the Bazalgette Consortium on the Group's successful bid to provide funding for the £4.2 billion Thames Tideway Tunnel project.
- In Other international, we continued to focus on our corporate and investment banking, fixed income trading distribution and foreign exchange trading capabilities.
- As a result of our successes in each of our regions, we received external recognition as an industry leader and were named or ranked:
  - Best Investment Bank in Canada ( *Euromoney Magazine*) for the eighth consecutive year.
  - The largest investment bank in Canada by fees for the first nine months of 2015 ( *Dealogic).*
  - The 10th largest investment bank globally and in the Americas ( *Thomson Reuters*) by fees for the first nine months of 2015.

**Outlook and priorities**

In 2016, as a result of strategic investments in our investment banking businesses in recent years, particularly in the U.S. and Europe, we anticipate growth in our investment banking businesses reflecting our focus on client activities. However, we expect that marginal growth in our lending revenue will be impacted by narrower spreads reflecting increased competition, as well as the risk of higher PCL.

Overall we anticipate net improvements in our global markets businesses driven by growth in our fixed income, currencies and commodities businesses as compared to the challenging market conditions in 2015. However, improvements in our businesses will be dependent on growth in the global economy, and stabilizing market conditions. We also anticipate that several tax changes in Canada could negatively impact our earnings, and heightened regulations will unfavourably impact growth in our businesses.

For further details, refer to our Risk management – Top and emerging risks section. For further details on our general economic outlook, refer to the Economic and market review and outlook section.

*Key strategic priorities for 2016*

- Maintain our leadership position in Canada by focusing on long-term client relationships, leveraging our global capabilities, and continuing to improve collaboration with Wealth Management.
- Expand and strengthen client relationships in the U.S. by building on our momentum through expanded origination, advisory and distribution activity, and driving cross-selling through our diversified loan book.
- Build on our core strengths in Europe in both Corporate and Investment Banking and Global Markets by continuing to grow and deepen client relationships, and in Asia by optimizing the performance of our existing footprint.
- Optimize capital use to earn high risk-adjusted returns by maintaining both a balanced approach between investment banking and trading revenue and a disciplined approach to managing the risks and costs of our business.
- Manage through the significant changes in the regulatory environment.

**Capital Markets financial highlights** **Table 34**

| (Millions of Canadian dollars, except percentage amounts and as otherwise noted) | 2015 | 2014 | 2013 |
|---|---|---|---|
| Net interest income (1) | **$ 3,970** | $ 3,485 | $ 2,872 |
| Non-interest income | **4,093** | 3,881 | 3,708 |
| **Total revenue** (1) | **8,063** | 7,366 | 6,580 |
| PCL | **71** | 44 | 188 |
| Non-interest expense | **4,696** | 4,344 | 3,856 |
| **Net income before income taxes** | **3,296** | 2,978 | 2,536 |
| **Net income** | **$ 2,319** | $ 2,055 | $ 1,700 |
| **Revenue by business** | | | |
| Corporate and Investment Banking | **$ 3,697** | $ 3,437 | $ 3,014 |
| Global Markets (2) | **4,477** | 3,896 | 3,314 |
| Other (2) | **(111)** | 33 | 252 |
| **Key ratios** | | | |
| ROE | **13.6%** | 14.1% | 14.1% |
| **Selected average balance sheet information** | | | |
| Total assets | **$ 477,300** | $392,300 | $ 368,300 |
| Trading securities | **116,200** | 103,800 | 100,800 |
| Loans and acceptances | **79,700** | 64,800 | 54,700 |
| Deposits | **60,300** | 47,600 | 38,400 |
| Attributed capital | **16,550** | 14,100 | 11,500 |
| **Other information** | | | |
| Number of employees (FTE) | **3,996** | 3,917 | 3,718 |
| **Credit information** | | | |
| Gross impaired loans as a % of average net loans and acceptances | **0.37%** | 0.08% | 0.42% |
| PCL on impaired loans as a % of average net loans and acceptances | **0.09%** | 0.07% | 0.34% |

**Estimated impact of U.S. dollar, British pound and Euro translation on key income statement items**

| (Millions of Canadian dollars, except percentage amounts) | 2015 vs. 2014 |
|---|---|
| *Increase (decrease):* | |
| Total revenue | **$ 602** |
| Non-interest expense | **364** |
| Net income | **145** |
| Percentage change in average US$ equivalent of C$1.00 | **(13)%** |
| Percentage change in average British pound equivalent of C$1.00 | **(6)%** |
| Percentage change in average Euro equivalent of C$1.00 | **4%** |

(1) The taxable equivalent basis (teb) adjustment for 2015 was $570 million (2014 – $492 million, 2013 – $380 million). For further discussion, refer to the How we measure and report our business segments section of our 2015 Annual Report.

(2) Effective the first quarter of 2015, we reclassified amounts from Global Markets to Other related to certain proprietary trading strategies which we exited in the fourth quarter of 2014 to comply with the Volcker Rule. Prior period amounts have been revised from those previously presented.




**Financial performance**

**2015 vs. 2014**

Net income increased $264 million or 13%, driven by growth in our global markets businesses mainly reflecting increased client activity, continued solid performance in our corporate and investment banking businesses, and the positive impact of foreign exchange translation. These factors were partially offset by lower results in certain legacy portfolios.

Total revenue increased $697 million or 9%, largely due to the positive impact of foreign exchange translation, growth in our global markets businesses reflecting increased client activity and more favourable market conditions in the first half of the year, and continued solid performance in our corporate and investment banking businesses. These factors were partially offset by lower revenue in certain legacy portfolios. In addition, our prior year trading revenue was unfavourably impacted by the implementation of funding valuation adjustments, and the exit from certain proprietary trading strategies to comply with the Volcker Rule.

PCL increased $27 million or 61%, primarily due to provisions taken on several accounts. For further details, refer to the Credit quality performance section.

Non-interest expense increased $352 million or 8%, reflecting an increase due to the impact of foreign exchange translation. Lower variable compensation and lower litigation provisions and related legal costs were mostly offset by higher costs to support business growth.

**2014 vs. 2013**

Net income increased $355 million or 21% from 2013, primarily due to higher equity trading revenue reflecting strong market conditions, strong growth in most of our investment banking businesses and higher lending revenue. Lower PCL and the positive impact of foreign exchange translation also contributed to the increase. These factors were partially offset by higher litigation provisions and related legal costs, and higher variable compensation on improved results. In addition, our 2014 results were unfavourably impacted by lower fixed income trading revenue largely driven by the unfavourable impact of the implementation of funding valuation adjustments, and the exit from certain proprietary trading strategies to comply with the Volcker Rule.

## Business line review

### Corporate and Investment Banking

Corporate and Investment Banking comprises our corporate lending, loan syndications, debt and equity origination, M&A advisory services, private equity, research, client securitization and the global credit businesses. For debt and equity origination, revenue is allocated between Corporate and Investment Banking and Global Markets based on the contribution of each group in accordance with an established agreement.

**Financial performance**

Corporate and Investment Banking revenue of $3,697 million increased $260 million or 8% including the positive impact of foreign exchange translation, as compared to last year.

Investment banking revenue increased $97 million or 6%, primarily due to strong growth in M&A activity reflecting increased mandates in the U.S. and Europe, and higher debt origination as a result of increased issuance activity mainly in the U.S. Higher loan syndication activity in Europe also contributed to the increase. These factors were partially offset by lower equity origination reflecting decreased client activity in all regions as compared to the strong levels last year, and lower distributions on private equity investments.

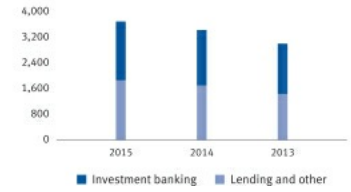
Lending and other revenue increased $163 million or 10%, due to solid lending growth in the U.S and Europe, and strong performance in our securitization businesses.

**Selected highlights** — Table 35

| (Millions of Canadian dollars) | 2015 | 2014 | 2013 |
|---|---|---|---|
| **Total revenue** (1) | **$ 3,697** | $ 3,437 | $ 3,014 |
| **Breakdown of revenue** (1) | | | |
| Investment banking | **1,833** | 1,736 | 1,574 |
| Lending and other (2) | **1,864** | 1,701 | 1,440 |
| **Other information** | | | |
| Average assets | **63,900** | 49,500 | 40,000 |
| Average loans and acceptances | **56,200** | 42,500 | 34,400 |

(1) The teb adjustment for 2015 was $25 million (2014 – $13 million, 2013 – $2 million). For further discussion, refer to the How we measure and report our business segments section.
(2) Comprises our corporate lending, client securitization, and global credit businesses.

**Breakdown of total revenue** (Millions of Canadian dollars)




### Global Markets

Global Markets comprises our fixed income, foreign exchange, equity sales and trading, repos and secured financing and commodities businesses.

**Financial performance**

Total revenue of $4,477 million increased $581 million or 15%, including the positive impact of foreign exchange translation, as compared to last year.

Revenue in our Fixed income, currencies and commodities business increased $121 million or 7%, mainly due to higher debt origination reflecting increased client issuance activity in all regions, and higher currencies and commodities trading revenue. These factors were partially offset by lower fixed income trading revenue reflecting challenging market conditions in the second half of the year. In addition, our prior year trading revenue was unfavourably impacted by the implementation of funding valuation adjustments.

Revenue in our Equities business increased $218 million or 19%, primarily due to higher equities trading revenue reflecting increased client activity primarily in the first half of the year, and volume growth in our cash equities businesses. These factors were partially offset by lower equity origination as compared to the strong levels last year.

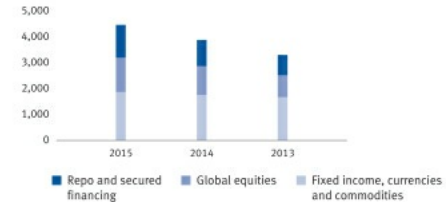
Revenue in our Repo and secured financing business increased $242 million or 24%, mainly reflecting higher client volumes and the positive impact of foreign exchange translation.

**Selected highlights** — Table 36

| (Millions of Canadian dollars) | 2015 | 2014 | 2013 |
|---|---|---|---|
| **Total revenue** (1) | **$ 4,477** | $ 3,896 | $ 3,314 |
| **Breakdown of revenue** (1) | | | |
| Fixed income, currencies and commodities | **1,881** | 1,760 | 1,680 |
| Equities | **1,336** | 1,118 | 856 |
| Repo and secured financing (2) | **1,260** | 1,018 | 778 |
| **Other information** | | | |
| Average assets | **494,400** | 366,000 | 343,700 |

(1) The teb adjustment for 2015 was $545 million (2014 – $470 million, 2013 –$357 million). For further discussion, refer to the How we measure and report our business segments section.
(2) Comprises our secured funding businesses for internal businesses and external clients.

**Breakdown of total revenue** (Millions of Canadian dollars)



## Other

Other includes our legacy portfolio which consists of our bank-owned life insurance (BOLI) stable value products, U.S. commercial mortgage-backed securities, U.S. auction rate securities (ARS), structured rates in Asia, and certain proprietary trading strategies. In recent years, in order to optimize our capital employed to improve our risk-adjusted returns and reduce our liquidity risk on various products, we have significantly reduced several of our legacy portfolios. Our legacy portfolios decreased by 37% as compared to last year.

**Financial performance**
Revenue decreased $144 million as compared to last year, mainly in certain legacy portfolios, including the exit of certain proprietary trading strategies last year to comply with the Volcker Rule.

## Corporate Support

**Corporate Support** — Table 37

| (Millions of Canadian dollars) | 2015 | 2014 | 2013 |
|---|---|---|---|
| Net interest income (loss) (1) | **$ (514)** | $ (313) | $ (124) |
| Non-interest income (loss) | **210** | 164 | (12) |
| **Total revenue** (1) | **(304)** | (149) | (136) |
| PCL | **(3)** | (2) | 3 |
| Non-interest expense | **125** | 89 | 72 |
| **Net income (loss) before income taxes** (1) | **(426)** | (236) | (211) |
| Income taxes (recoveries) (1) | **(824)** | (405) | (653) |
| **Net income** (2) | **$ 398** | $ 169 | $ 442 |
| **Other information** | | | |
| Number of employees (FTE) | **13,301** | 12,460 | 11,943 |

(1) Teb adjusted.
(2) Net income reflects income attributable to both shareholders and Non-Controlling Interests (NCI). Net income attributable to NCI for the year ended October 31, 2015 was $94 million (October 31, 2014 – $93 million; October 31, 2013 – $93 million).

Due to the nature of activities and consolidation adjustments reported in this segment, we believe that a comparative period analysis is not relevant. The following identifies material items affecting the reported results in each period.

Net interest income (loss) and income taxes (recoveries) in each period in Corporate Support include the deduction of the teb adjustments related to the gross-up of income from Canadian taxable corporate dividends recorded in Capital Markets. The amount deducted from net interest income (loss) was offset by an equivalent increase in income taxes (recoveries). The teb amount for the year ended October 31, 2015 was $570 million as compared to $492 million last year and $380 million for the year ended October 31, 2013.

In addition to the teb impacts noted above, the following identifies the other material items affecting the reported results in each period.

**2015**
Net income was $398 million, largely reflecting net favourable tax adjustments, asset/liability management activities, a gain of $108 million (before- and after-tax) from the wind-up of a U.S.-based funding subsidiary that resulted in the release of CTA, and a gain on sale of a real estate asset. These factors were partially offset by transaction costs related to our acquisition of City National.

**2014**
Net income was $169 million largely reflecting asset/liability management activities and gains on private equity investments mainly related to the sale of a legacy portfolio, partially offset by net unfavourable tax adjustments.

**2013**
Net income was $442 million largely reflecting net favourable tax adjustments, including $214 million of income tax adjustments related to previous years, and asset/liability management activities.

## Results by geographic segment (1)

For geographic reporting, our segments are grouped into the following: Canada, U.S., and Other International. Transactions are primarily recorded in the location that best reflects the risk due to negative changes in economic conditions and prospects for growth due to positive economic changes. The following table summarizes our financial results by geographic region.

Table 38

| (Millions of Canadian dollars) | 2015 Canada | 2015 U.S. | 2015 Other International | 2015 Total | 2014 (2) Canada | 2014 (2) U.S. | 2014 (2) Other International | 2014 (2) Total | 2013 (2) Canada | 2013 (2) U.S. | 2013 (2) Other International | 2013 (2) Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Net interest income | **$ 11,538** | **$ 1,977** | **$ 1,256** | **$ 14,771** | $ 11,128 | $ 1,697 | $ 1,291 | $ 14,116 | $ 10,961 | $ 1,448 | $ 840 | $ 13,249 |
| Non-interest income | **10,889** | **4,619** | **5,042** | **20,550** | 10,488 | 4,257 | 5,247 | 19,992 | 8,601 | 3,810 | 5,022 | 17,433 |
| **Total revenue** | **$ 22,427** | **$ 6,596** | **$ 6,298** | **$ 35,321** | $ 21,616 | $ 5,954 | $ 6,538 | $ 34,108 | $ 19,562 | $ 5,258 | $ 5,862 | $ 30,682 |
| PCL | **933** | **98** | **66** | **1,097** | 922 | 52 | 190 | 1,164 | 892 | 78 | 267 | 1,237 |
| PBCAE | **1,976** | **–** | **987** | **2,963** | 2,188 | 1 | 1,384 | 3,573 | 1,425 | 10 | 1,349 | 2,784 |
| Non-interest expense | **10,139** | **4,762** | **3,737** | **18,638** | 9,650 | 4,199 | 3,812 | 17,661 | 9,210 | 3,663 | 3,341 | 16,214 |
| Income taxes | **1,727** | **649** | **221** | **2,597** | 1,983 | 660 | 63 | 2,706 | 1,710 | 370 | 25 | 2,105 |
| **Net income** | **$ 7,652** | **$ 1,087** | **$ 1,287** | **$ 10,026** | $ 6,873 | $ 1,042 | $ 1,089 | $ 9,004 | $ 6,325 | $ 1,137 | $ 880 | $ 8,342 |

(1) For further details, refer to Note 30 of our audited 2015 Annual Consolidated Financial Statements.
(2) Amounts have been revised from those previously presented.

**2015 vs. 2014**

Net income in Canada was up $779 million or 11% from the prior year, mainly due to solid volume growth and strong fee-based revenue growth across most businesses in Canadian Banking, a lower effective tax rate reflecting net favourable income tax adjustments, and higher earnings in Investor & Treasury Services. A gain of $108 million (before- and after-tax) from the wind-up of a U.S.-based funding subsidiary that resulted in the release of CTA also contributed to the increase. These factors were partially offset by higher costs in support of business growth, and lower spreads.

U.S. net income increased $45 million or 4% compared to last year, primarily due to the positive impact of foreign exchange translation, growth in our global markets businesses reflecting increased client activity and more favourable market conditions in the first half of the year, and higher results in most corporate and investment banking businesses. Lower litigation provisions and related legal costs in Capital Markets also contributed to the increase. These factors were partially offset by higher costs in support of business growth.

Other International net income was up $198 million or 18% from the prior year, mainly due to lower provisions in our Caribbean portfolios, and higher lending activity in Europe. These factors were partially offset by restructuring costs related to our U.S. & International Wealth Management business. In addition, our results last year were unfavourably impacted by a loss of $100 million (before- and after-tax) related to the sale of RBC Jamaica and a provision of $40 million ($32 million after-tax) related to post-employment benefits and restructuring charges in the Caribbean.

**2014 vs. 2013**

Net income in Canada was up $548 million or 9% as compared to 2013, mainly due to solid volume growth across most of our businesses in Canadian Banking, and higher earnings from growth in average fee-based client assets resulting from capital appreciation and strong net sales in Wealth Management. Strong fee-based revenue growth primarily attributable to higher mutual fund distribution fees and card services revenue in Canadian Banking also contributed to the increase. These factors were partially offset by higher costs in support of business growth including higher staff and marketing costs, and the unfavourable impact of the implementation of the funding valuation adjustments. In addition, results in 2013 benefited from net favourable tax adjustments. Our results in 2013 were also unfavourably impacted by a charge of $160 million ($118 million after-tax) as a result of new tax legislation in Canada, which affects the policyholders' tax treatment of certain individual life insurance policies.

U.S. net income was down $95 million or 8% as compared to 2013, as 2013 benefited from favourable income tax adjustments, including $214 million related to prior years. Strong growth in our lending portfolio, strong equity markets and our continued focus on equity origination and increased activity from client-focused strategies were partly offset by higher litigation provisions and related legal costs in Capital Markets.

Other International net income was up $209 million or 24% as compared to 2013, largely due to lower PCL in Capital Markets, higher trading revenue in Europe, and higher lending in Capital Markets. These factors were partially offset by a loss of $100 million (before- and after-tax) related to the sale of RBC Jamaica, and a provision of $40 million ($32 million after-tax) related to post-employment benefits and restructuring charges in the Caribbean. In addition, our results in 2013 were unfavourably impacted by a restructuring charge of $44 million related to the integration of Investor Services, primarily in Europe.

## Quarterly financial information

### Fourth quarter 2015 performance

**Q4 2015 vs. Q4 2014**

Fourth quarter net income of $2,593 million was up $260 million or 11%, from last year. Diluted EPS of $1.74 was up $0.17 and ROE of 17.9% was down 110 bps. Our fourth quarter earnings reflected solid earnings growth in our Capital Markets and Personal & Commercial Banking segments, a lower effective tax rate due to net favourable tax adjustments, lower PCL, and the impact of foreign exchange translation. These factors were partially offset by lower funding and liquidity results in Investor & Treasury Services due to widening credit spreads and unfavourable market conditions, and restructuring costs and lower transaction volumes in Wealth Management.

Total revenue decreased $363 million or 4%, mainly due to a change in the fair value of investments backing our policyholder liabilities, and a reduction in revenue related to our retrocession contracts, both of which were largely offset in PBCAE, in our Insurance segment. Lower equity origination revenue reflecting decreased client issuance activity, and lower fixed income trading revenue primarily due to unfavourable

market conditions which negatively impacted Capital Markets revenue, while lower transaction volumes in Wealth Management, and lower spreads in Personal & Commercial Banking also contributed to the decrease in revenue. These factors were partly offset by the positive impact of foreign exchange translation, and business growth primarily in our life, annuity, home and auto insurance businesses, higher equity trading revenue in Capital Markets reflecting increased client activity, and solid volume growth across most businesses in Canadian Banking. In addition, our prior year revenue was unfavourably impacted by the implementation of funding valuation adjustments, and the exit from certain proprietary trading strategies to comply with the Volcker Rule in Capital Markets, as well as favourable net cumulative accounting adjustments in Canadian Banking.

Total PCL decreased $70 million from last year, mainly reflecting lower provisions in our Caribbean portfolios due to provisions of $50 million on our Caribbean impaired residential mortgage portfolio included in the prior year. Lower provisions in our Canadian commercial lending portfolio also contributed to the decrease. The PCL ratio of 23 bps decreased 8 bps from last year.

PBCAE decreased $460 million or 61%, largely reflecting a change in fair value of investments backing our policyholder liabilities, and a reduction of PBCAE related to our retrocession contracts, both of which were largely offset in revenue. These factors were partially offset by business growth as noted above.

Non-interest expense increased $307 million or 7%, primarily reflecting the impact of foreign exchange translation, higher costs in support of business growth, and restructuring costs of $46 million ($38 million after-tax) largely related to our U.S. & International Wealth Management business, including the sale of RBC Suisse.

Income tax expense decreased $400 million or 65% from last year, and the effective income tax rate decreased from 20.8% last year to 7.6%, primarily due to net favourable tax adjustments in Corporate Support and Capital Markets.

**Q4 2015 vs. Q3 2015**

Net income of $2,593 million increased $118 million, or 5% compared to the prior quarter, largely due to a lower effective tax rate reflecting net favourable tax adjustments, and higher earnings in Insurance and Capital Markets. These factors were partly offset by lower funding and liquidity results in Investor & Treasury Services, and restructuring costs in Wealth Management as noted above.

## Quarterly results and trend analysis

Our quarterly results are impacted by a number of trends and recurring factors, which include seasonality of certain businesses, general economic and market conditions, and fluctuations in the Canadian dollar relative to other currencies. The following table summarizes our results for the last eight quarters (the period):

**Quarterly results** (1) **Table 39**

| (Millions of Canadian dollars, except per share and percentage amounts) | 2015 | | | | 2014 | | | |
|---|---|---|---|---|---|---|---|---|
| | **Q4** | **Q3** | **Q2** | **Q1** | Q4 | Q3 | Q2 | Q1 |
| Net interest income | **$ 3,800** | **$ 3,783** | **$ 3,557** | **$ 3,631** | $ 3,560 | $ 3,647 | $ 3,449 | $ 3,460 |
| Non-interest income | **4,219** | **5,045** | **5,273** | **6,013** | 4,822 | 5,343 | 4,827 | 5,000 |
| **Total revenue** | **$ 8,019** | **$ 8,828** | **$ 8,830** | **$ 9,644** | $ 8,382 | $ 8,990 | $ 8,276 | $ 8,460 |
| PCL | **275** | **270** | **282** | **270** | 345 | 283 | 244 | 292 |
| PBCAE | **292** | **656** | **493** | **1,522** | 752 | 1,009 | 830 | 982 |
| Non-interest expense | **4,647** | **4,635** | **4,736** | **4,620** | 4,340 | 4,602 | 4,332 | 4,387 |
| **Net income before income taxes** | **$ 2,805** | **$ 3,267** | **$ 3,319** | **$ 3,232** | $ 2,945 | $ 3,096 | $ 2,870 | $ 2,799 |
| Income taxes | **212** | **792** | **817** | **776** | 612 | 718 | 669 | 707 |
| **Net income** | **$ 2,593** | **$ 2,475** | **$ 2,502** | **$ 2,456** | $ 2,333 | $ 2,378 | $ 2,201 | $ 2,092 |
| EPS – basic | **$ 1.74** | **$ 1.66** | **$ 1.68** | **$ 1.66** | $ 1.57 | $ 1.59 | $ 1.47 | $ 1.39 |
| – diluted | **1.74** | **1.66** | **1.68** | **1.65** | 1.57 | 1.59 | 1.47 | 1.38 |
| **Segments – net income (loss)** | | | | | | | | |
| Personal & Commercial Banking | **$ 1,270** | **$ 1,281** | **$ 1,200** | **$ 1,255** | $ 1,151 | $ 1,138 | $ 1,115 | $ 1,071 |
| Wealth Management | **255** | **285** | **271** | **230** | 285 | 285 | 278 | 235 |
| Insurance | **225** | **173** | **123** | **185** | 256 | 214 | 154 | 157 |
| Investor & Treasury Services | **88** | **167** | **159** | **142** | 113 | 110 | 112 | 106 |
| Capital Markets | **555** | **545** | **625** | **594** | 402 | 641 | 507 | 505 |
| Corporate Support | **200** | **24** | **124** | **50** | 126 | (10) | 35 | 18 |
| **Net income** | **$ 2,593** | **$ 2,475** | **$ 2,502** | **$ 2,456** | $ 2,333 | $ 2,378 | $ 2,201 | $ 2,092 |
| Effective income tax rate | **7.6%** | **24.2%** | **24.6%** | **24.0%** | 20.8% | 23.2% | 23.3% | 25.3% |
| Period average US$ equivalent of C$1.00 | **$ 0.758** | **$ 0.789** | **$ 0.806** | **$ 0.839** | $ 0.900 | $ 0.925 | $ 0.907 | $ 0.926 |

(1) Fluctuations in the Canadian dollar relative to other foreign currencies have affected our consolidated results over the period.

**Seasonality**

Seasonal factors may impact our results in certain quarters. The first quarter has historically been seasonally stronger for our capital markets businesses. The second quarter has fewer days than the other quarters, which generally results in a decrease in net interest income and certain expense items. The third quarter results for Investor & Treasury Services are generally favourably impacted by higher securities lending as a result of the European dividend season. The third and fourth quarters include the summer months during which market activity generally tends to slow, negatively impacting the results of our capital markets, brokerage and investment management businesses.

**Specified items affecting our consolidated results**

- In the second quarter of 2015, our results included a gain of $108 million (before- and after-tax) from the wind-up of a U.S.-based funding subsidiary that resulted in the release of foreign currency translation adjustment that was previously booked in other components of equity.
- In the third quarter of 2014, our results included a loss of $40 million (before- and after-tax) which includes foreign currency translation related to the closing of the sale of RBC Jamaica.
- In the first quarter of 2014, our results included a loss of $60 million (before- and after-tax) related to the announced sale of RBC Jamaica, as well as a provision of $40 million ($32 million after-tax) related to post-employment benefits and restructuring charges in the Caribbean.

**Trend analysis**

The Canadian and U.S. economies have generally improved over the period, reflecting solid consumer spending, stronger labour markets and firm housing market activity. Since the third quarter of 2014, growth in Canada has moderated with growth contracting in the first half of calendar 2015 due to the sharp decline in global oil prices, and slow export activity. Global equity indices experienced volatility throughout the period resulting from the possibility of Euro area recession, the lower global oil prices, and diverging monetary policies amongst global central banks. For further details, refer to the Economic and market review and outlook section.

Earnings have generally trended upwards over the period, driven by solid volume growth and higher fee-based revenue growth in our Canadian Banking businesses, and higher earnings from growth in average fee-based client assets reflecting capital appreciation and strong net sales in Wealth Management. Capital Markets results have generally trended upwards since the first quarter of 2014, and were negatively impacted in the fourth quarter of 2014 by the exit from certain proprietary trading strategies to comply with the Volcker Rule and the implementation of funding valuation adjustments. Results in our Insurance segment have fluctuated in 2015, as they were impacted by an unfavourable change in Canadian tax legislation impacting certain foreign affiliates, which became effective November 1, 2014. Investor & Treasury Services results have generally trended upwards over the period largely due to increased client activity in our foreign exchange business and higher foreign exchange transaction volumes. Investor & Treasury Services results in the third quarter of 2015 benefited from an additional month of earnings as a result of aligning the reporting periods, while results in the fourth quarter of 2015 were impacted by lower funding and liquidity results due to widening credit spreads and unfavourable market conditions.

Revenue has generally fluctuated over the period mostly due to the change in fair value of investments backing our policyholder liabilities, which is largely offset in PBCAE. Solid volume growth and higher fee-based revenue growth in our Canadian Banking businesses, and growth in average fee-based client assets in Wealth Management have increased revenue over the period. Trading revenue has generally trended upwards since the first quarter of 2014, and was unfavourably impacted in the fourth quarter of 2014 by the exit of certain proprietary trading strategies and the implementation of funding valuation adjustments. Trading revenue in the second half of 2015 was negatively impacted due to widening credit spreads. Net interest income has trended upwards over the period, largely due to solid volume growth across our Canadian Banking businesses, and higher trading-related net interest income and solid lending activity in Capital Markets. Starting in the first quarter of 2014, the positive impact of foreign exchange translation due to a generally weaker Canadian dollar has also contributed to the increase in revenue. Insurance revenue is primarily impacted by changes in the fair value of investments backing our policyholder liabilities, which is largely offset in PBCAE.

Asset quality remained strong over the period despite increased lending activity, with PCL remaining relatively stable over the period. The fourth quarter of 2014 included additional provisions in Personal & Commercial Banking related to our impaired residential mortgages portfolio in the Caribbean. Wealth Management had provisions related to our U.S. & International Wealth Management business starting in the first quarter of 2014. PCL in Capital Markets has fluctuated over the period.

PBCAE has fluctuated quarterly as it includes the changes to the fair value of investments backing our policyholder liabilities, which is largely offset in revenue. PBCAE has also increased due to business growth in our Insurance businesses, as well as actuarial liability adjustments and generally lower claims costs over the period.

While we continue to focus on efficiency management activities, non-interest expense has generally trended upwards over the period, mostly to support business growth. Restructuring costs related to our U.S. & International Wealth Management business have increased non-interest expense since the fourth quarter of 2014. Non-interest expense in 2014 was impacted by the loss related to the sale of RBC Jamaica and a provision in the Caribbean. Since the first quarter of 2014, non-interest expense has increased due to the impact of foreign exchange translation generally reflecting the weaker Canadian dollar.

Our effective income tax rate has fluctuated over the period, mostly due to varying levels of income being reported in jurisdictions with different tax rates, as well as fluctuating levels of income from tax-advantaged sources such as Canadian taxable corporate dividends. Our effective income tax rate has generally been impacted over the period by higher earnings before income taxes, increased earnings in higher tax jurisdictions, and by net favourable tax adjustments.

## Financial condition

### Condensed balance sheets

The following table shows our condensed balance sheet:

Table 40

| (Millions of Canadian dollars) | 2015 | 2014 | 2013 |
|---|---|---|---|
| **Assets** (1) | | | |
| Cash and due from banks | **$ 12,452** | $ 17,421 | $ 15,550 |
| Interest-bearing deposits with banks | **22,690** | 8,399 | 9,039 |
| Securities | **215,508** | 199,148 | 182,710 |
| Assets purchased under reverse repurchase agreements and securities borrowed | **174,723** | 135,580 | 117,517 |
| Loans | | | |
| Retail | **348,183** | 334,269 | 320,666 |
| Wholesale | **126,069** | 102,954 | 90,143 |
| Allowance for loan losses | **(2,029)** | (1,994) | (1,959) |
| Segregated fund net assets | **830** | 675 | 513 |
| Other – Derivatives | **105,626** | 87,402 | 74,822 |
| – Other | **70,156** | 56,696 | 50,744 |
| **Total assets** | **$ 1,074,208** | $ 940,550 | $ 859,745 |
| **Liabilities** (1) | | | |
| Deposits | **$ 697,227** | $ 614,100 | $ 563,079 |
| Segregated fund liabilities | **830** | 675 | 513 |
| Other – Derivatives | **107,860** | 88,982 | 76,745 |
| – Other | **196,985** | 174,431 | 162,505 |
| Subordinated debentures | **7,362** | 7,859 | 7,443 |
| Total liabilities | **1,010,264** | 886,047 | 810,285 |
| **Equity attributable to shareholders** | **62,146** | 52,690 | 47,665 |
| Non-controlling interests | **1,798** | 1,813 | 1,795 |
| Total equity | **63,944** | 54,503 | 49,460 |
| **Total liabilities and equity** | **$ 1,074,208** | $ 940,550 | $ 859,745 |

(1) Foreign currency-denominated assets and liabilities are translated to Canadian dollars.

**2015 vs. 2014**

Total assets were up $134 billion or 14% from last year, primarily reflecting an increase of $96 billion due to the impact of foreign exchange translation as a result of the weaker Canadian dollar.

Interest-bearing deposits with banks increased $14 billion, largely reflecting higher deposits with central banks.

Securities were up $16 billion or 8% compared to last year, primarily reflecting an increase due to the impact of foreign exchange translation, and an increase in government debt securities largely reflecting our management of interest rate risk, partially offset by a decrease in equity trading positions mainly due to regulatory requirements and market conditions.

Assets purchased under reverse repurchase agreements (reverse repos) and securities borrowed increased $39 billion or 29%, mainly attributable to an increase due to the impact of foreign exchange translation and increased client and business activities.

Loans were up $37 billion or 8%, largely due to volume growth in wholesale loans and residential mortgages, and an increase due to the impact of foreign exchange translation.

Derivative assets were up $18 billion or 21%, mainly attributable to the increase due to the impact of foreign exchange translation and higher fair values on interest rate swaps. These factors were partially offset by lower fair values on foreign exchange cross-currency interest rate contracts and increased financial netting.

Other assets were up $13 billion or 24%, largely reflecting higher cash collateral requirements and an increase due to the impact of foreign exchange translation.

Total liabilities were up $124 billion or 14% from last year, primarily reflecting an increase of $96 billion due to the impact of foreign exchange translation as a result of the weaker Canadian dollar.

Deposits increased $83 billion or 14%, mainly reflecting an increase due to the impact of foreign exchange translation and the issuances of fixed term notes and covered bonds to satisfy our funding requirements. Growth in business and retail deposits also contributed to the increase.

Derivative liabilities were up $19 billion or 21%, mainly attributable to the increase due to the impact of foreign exchange translation and higher fair values on interest rate swaps. These factors were partially offset by lower fair values on foreign exchange cross-currency interest rate contracts and increased financial netting.

Other liabilities increased $23 billion or 13%, mainly reflecting an increase due to the impact of foreign exchange translation, higher obligations related to repurchase agreements largely reflecting increased client and business activities, and an increase in cash collateral requirements. These factors were partly offset by lower obligations related to securities sold short.

Total equity increased $9 billion or 17%, largely reflecting earnings, net of dividends.

## Off-balance sheet arrangements

In the normal course of business, we engage in a variety of financial transactions that, for accounting purposes, are not recorded on our Consolidated Balance Sheets. Off-balance sheet transactions are generally undertaken for risk, capital and funding management purposes which benefit us and our clients. These include transactions with structured entities and may also include the issuance of guarantees. These transactions give rise to, among other risks, varying degrees of market, credit, liquidity and funding risk, which are discussed in the Risk management section.

We use structured entities to securitize our financial assets as well as assist our clients in securitizing their financial assets. These entities are not operating entities, typically have no employees, and may or may not be recorded on our Consolidated Balance Sheets.

In the normal course of business, we engage in a variety of financial transactions that may qualify for derecognition. We apply the derecognition rules to determine whether we have effectively transferred substantially all the risks and rewards or control associated with the financial assets to a third party. If the transaction meets specific criteria, it may qualify for full or partial derecognition from our Consolidated Balance Sheets.

**Securitizations of our financial assets**

We periodically securitize our credit card receivables, residential and commercial mortgage loans and bond participation certificates primarily to diversify our funding sources, to enhance our liquidity position and for capital purposes. We also securitize residential and commercial mortgage loans for sales and trading activities.

We securitize our credit card receivables, on a revolving basis, through a consolidated structured entity. We securitize single and multiple-family residential mortgages through the National Housing Act Mortgage-Backed Securities (NHA MBS) program. The majority of our securitization activities are recorded on our Consolidated Balance Sheets as we do not meet the derecognition criteria. During 2015, we derecognized $967 million of purchased mortgages where both the NHA MBS and the residual interests in the mortgages were sold to third parties resulting in the transfer of substantially all of the risks and rewards (2014 – $nil). For additional details of our securitization activities, refer to Note 6 and Note 7 of our audited 2015 Annual Consolidated Financial Statements.

We periodically securitize residential mortgage loans for the Canadian social housing program through the NHA MBS program, which are derecognized from our Consolidated Balance Sheets when sold to third party investors. During 2015, we securitized $112 million of residential mortgage loans for the Canadian social housing program (2014 – $158 million).

We also periodically securitize commercial mortgages by selling them in collateral pools, which meet certain diversification, leverage and debt coverage criteria, to structured entities, one of which is sponsored by us. Securitized commercial mortgage loans are derecognized from our Consolidated Balance Sheets as we have transferred substantially all of the risk and rewards of ownership of the securitized assets. Our continuing involvement with the transferred assets is limited to servicing the underlying commercial mortgages sold to our sponsored structured entity. As at October 31, 2015, there were $1.1 billion of commercial mortgages outstanding related to these securitization activities (October 31, 2014 – $1.3 billion). During 2015, we securitized $195 million of commercial mortgages which were sold to our sponsored entity (2014 – $173 million).

In prior years, we participated in bond securitization activities where we purchased government, government related and corporate bonds and repackaged those bonds in trusts that issue participation certificates, which were sold to third party investors. Securitized bonds are derecognized from our Consolidated Balance Sheets as we have transferred substantially all of the risk and rewards of ownership of the securitized assets. Our continuing involvement with the transferred assets is limited to servicing the underlying bonds. As at October 31, 2015, there were $138 million of bond participation certificates outstanding related to these prior period securitization activities (October 31, 2014 – $356 million). We did not securitize bond participation certificates during 2015 or 2014.

**Involvement with unconsolidated structured entities**

In the normal course of business, we engage in a variety of financial transactions with structured entities to support our customers' financing and investing needs, including securitization of client financial assets, creation of investment products, and other types of structured financing.

We have the ability to use credit mitigation tools such as third party guarantees, credit default swaps, and collateral to mitigate risks assumed through securitization and re-securitization exposures. The process in place to monitor the credit quality of our securitization and re-securitization exposures involves, among other things, reviewing the performance of the underlying assets. We affirm our ratings each quarter and formally confirm or assign a new rating at least annually. For further details on our activities to manage risks, refer to the Risk management section.

Below is a description of our activities with respect to certain significant unconsolidated structured entities. For a complete discussion of our interests in consolidated and unconsolidated structured entities, refer to Note 7 of our audited 2015 Annual Consolidated Financial Statements.

*RBC-administered multi-seller conduits*

We administer multi-seller conduits which are used primarily for the securitization of our clients' financial assets. We are involved in these conduit markets because our clients value these transactions. Our clients primarily use multi-seller conduits to diversify their financing sources and to reduce funding costs by leveraging the value of high-quality collateral. The conduits offer us a favourable revenue stream, risk-adjusted return and cross-selling opportunities.

We provide services such as transaction structuring, administration, backstop liquidity facilities and partial credit enhancements to the multi-seller conduits. Fee revenue for all such services amounted to $213 million during the year (2014 – $168 million). We do not maintain any ownership or retained interests in these multi-seller conduits and have no rights to, or control of, their assets.

Our total commitment to the conduits in the form of backstop liquidity and credit enhancement facilities is shown below. The total committed amount of these facilities exceeds the total amount of the maximum assets that may have to be purchased by the conduits under the purchase agreements. As a result, the maximum exposure to loss attributable to our backstop liquidity and credit enhancement facilities is less than the total committed amounts of these facilities.

**Liquidity and credit enhancement facilities** **Table 41**

| As at October 31 (Millions of Canadian dollars) | 2015 Notional of committed amounts (1) | 2015 Allocable notional amounts | 2015 Outstanding loans (2) | 2015 Maximum exposure to loss (3) | 2014 (4) Notional of committed amounts (1) | 2014 (4) Allocable notional amounts | 2014 (4) Outstanding loans (2) | 2014 (4) Maximum exposure to loss (3) |
|---|---|---|---|---|---|---|---|---|
| Backstop liquidity facilities | **$ 37,770** | **$ 34,163** | **$ 764** | **$ 34,927** | $ 31,019 | $ 28,056 | $ 864 | $ 28,920 |
| Credit enhancement facilities | **2,974** | **2,843** | **–** | **2,843** | 2,177 | 2,099 | – | 2,099 |
| Total | **$ 40,744** | **$ 37,006** | **$ 764** | **$ 37,770** | $ 33,196 | $ 30,155 | $ 864 | $ 31,019 |

(1) Based on total committed financing limit.
(2) Net of allowance for loan losses and write-offs.
(3) Not presented in the table above are derivative assets with a fair value of $19 million (2014 – $nil) which are a component of our total maximum exposure to loss from our interests in the multi-seller conduits. Refer to Note 7 of our audited 2015 Annual Consolidated Financial Statements for more details.
(4) Certain amounts have been revised from those previously reported.

As at October 31, 2015, the notional amount of backstop liquidity facilities we provide increased by $6,751 million or 22% from last year. Total loans extended to the multi-seller conduits under the backstop liquidity facilities decreased by $100 million from last year primarily due to principal repayments which were offset by exchange rate fluctuations. The partial credit enhancement facilities we provide increased by $797 million from last year. The changes in both the amount of backstop liquidity facilities and credit enhancement facilities provided to the multi-seller conduits as compared to last year primarily reflect increases related to exchange rate fluctuations and the outstanding securitized assets of the multi-seller conduits.

**Maximum exposure to loss by client type** **Table 42**

| As at October 31 (Millions) | 2015 (US$) | 2015 (C$) | 2015 Total (C$) | 2014 (US$) | 2014 (C$) | 2014 Total (C$) |
|---|---|---|---|---|---|---|
| **Outstanding securitized assets** | | | | | | |
| Credit cards | **$ 4,679** | **$ 510** | **$ 6,628** | $ 5,768 | $ 510 | $ 7,011 |
| Auto loans and leases | **8,606** | **2,352** | **13,604** | 8,154 | 1,793 | 10,983 |
| Student loans | **3,473** | **–** | **4,541** | 2,536 | – | 2,858 |
| Trade receivables | **2,175** | **112** | **2,956** | 2,094 | 112 | 2,472 |
| Asset-backed securities | **584** | **–** | **764** | 767 | – | 864 |
| Equipment receivables | **1,362** | **–** | **1,781** | 1,301 | – | 1,466 |
| Consumer loans | **706** | **–** | **923** | – | – | – |
| Dealer floor plan receivables | **1,261** | **903** | **2,552** | 1,053 | 771 | 1,958 |
| Fleet finance receivables | **441** | **377** | **954** | 436 | 377 | 869 |
| Insurance premiums | **128** | **153** | **320** | 127 | – | 144 |
| Residential mortgages | **–** | **1,020** | **1,020** | – | 1,275 | 1,275 |
| Transportation finance | **1,204** | **153** | **1,727** | 857 | 153 | 1,119 |
| **Total** | **$ 24,619** | **$ 5,580** | **$ 37,770** | $ 23,093 | $ 4,991 | $ 31,019 |
| **Canadian equivalent** | **$ 32,190** | **$ 5,580** | **$ 37,770** | $ 26,028 | $ 4,991 | $ 31,019 |

Our overall exposure increased by 22% compared to last year reflecting an increase in the outstanding securitized assets of the multi-seller conduits and exchange rate fluctuations. Correspondingly, total assets of the multi-seller conduits increased by $6,616 million or 22% over last year, primarily due to increases in the Auto loans and leases, Student loans, Consumer loans, Transportation finance, Dealer floor plan and Trade receivables asset classes, which were partially offset by decreases in Credit cards and Residential mortgages asset classes. 100% of multi-seller conduits assets were internally rated A or above, consistent with last year. All transactions funded by the unconsolidated multi-seller conduits are internally rated using a rating system which is largely consistent with that of the external rating agencies.

Multiple independent debt rating agencies review all of the transactions in the multi-seller conduits. Transactions financed in two U.S. multi-seller conduits are reviewed by Moody's Investors Service (Moody's), Standard & Poor's (S&P) and Fitch Ratings (Fitch). One U.S. multi-seller conduit is reviewed by S&P. Transactions in the Canadian multi-seller conduits are reviewed by Dominion Bond Rating Services (DBRS) and Moody's. Each applicable rating agency also reviews ongoing transaction performance on a monthly basis and may publish reports detailing portfolio and program information related to the conduits.

As at October 31, 2015, the total asset-backed commercial paper (ABCP) issued by the conduits amounted to $25.5 billion, an increase of $5.7 billion or 29% from last year. The increase in the amount of ABCP issued by the multi-seller conduits compared to last year is primarily due to an increase in the outstanding securitized assets of the multi-seller conduits and exchange rate fluctuations. The rating agencies that rate the ABCP rated 71% (October 31, 2014 – 73%) of the total amount issued within the top ratings category and the remaining amount in the second highest ratings category.

We sometimes purchase ABCP issued by the multi-seller conduits in our capacity as a placement agent in order to facilitate overall program liquidity. As at October 31, 2015, the fair value of our inventory was $17 million, a decrease of $25 million from last year. The fluctuations in inventory held reflect normal trading activity. This inventory is classified as Securities – Trading on our Consolidated Balance Sheets.

*Structured finance*

We invest in ARS of trusts which fund their long-term investments in student loans by issuing short-term senior and subordinated notes. Our maximum exposure to loss in these ARS trusts as at October 31, 2015 was $546 million (October 31, 2014 – $913 million). The decrease in our maximum exposure to loss is primarily related to the sale of ARS. Interest income from the ARS investments, which is reported in Net-interest income was, $6.9 million during the year (2014 – $7.2 million).

We also provide liquidity facilities to certain municipal bond Tender Option Bond (TOB) trusts in which we have an interest but do not consolidate because the residual certificates issued by the TOB trusts are held by third parties. As at October 31, 2015, our maximum exposure

to loss from these unconsolidated municipal bond TOB trusts was $856 million (October 31, 2014 – $749 million). The increase in our maximum exposure to loss relative to last year is primarily due to exchange rate differences. Fee revenue from provision of liquidity facilities to these entities reported in Non-interest income was $3.7 million during the year (2014 – $2.8 million).

We provide senior warehouse financing to unaffiliated structured entities that are established by third parties to acquire loans and issue a term collateralized loan obligation transaction. A portion of the proceeds from the sale of the term collateralized loan obligations certificates is used to fully repay the senior warehouse financing that we provide. As at October 31, 2015 our maximum exposure to loss associated with the outstanding senior warehouse financing facilities was $444 million (October 31, 2014 – $nil). The increase in our maximum exposure to loss relative to the prior year is related to an increase in the outstanding drawings on certain financing facilities.

*Investment funds*

We enter into fee-based equity derivative transactions with third parties including mutual funds, unit investment trusts and other investment funds. These transactions provide their investors with the desired exposure to the reference funds, and we economically hedge our exposure from these derivatives by investing in those third party managed reference funds. Our maximum exposure as at October 31, 2015, which is primarily related to our investments in such reference funds, was $2.6 billion (October 31, 2014 – $3.4 billion). The decrease in our maximum exposure compared to last year is primarily due to the liquidation of certain reference funds in response to new regulatory requirements in the U.S.

We also provide liquidity facilities to certain third party investment funds. The funds issue unsecured variable-rate preferred shares and invest in portfolios of tax exempt bonds. As at October 31, 2015, our maximum exposure to these funds was $744 million (October 31, 2014 – $641 million). The increase in our maximum exposure compared to last year is primarily due to exchange rate differences.

*Third-party securitization vehicles*

We hold interests in certain unconsolidated third-party securitization vehicles, which are structured entities. We, as well as other financial institutions, are obligated to provide funding to these entities up to our maximum commitment level and are exposed to credit losses on the underlying assets after various credit enhancements. As at October 31, 2015, our maximum exposure to loss in these entities was $9.7 billion (October 31, 2014 – $2.4 billion). The increase in our maximum exposure compared to last year reflects additional securitized assets in these vehicles and exchange rate fluctuations. Interest and non-interest income earned in respect of these investments was $56 million (2014 – $20 million).

**Guarantees, retail and commercial commitments**

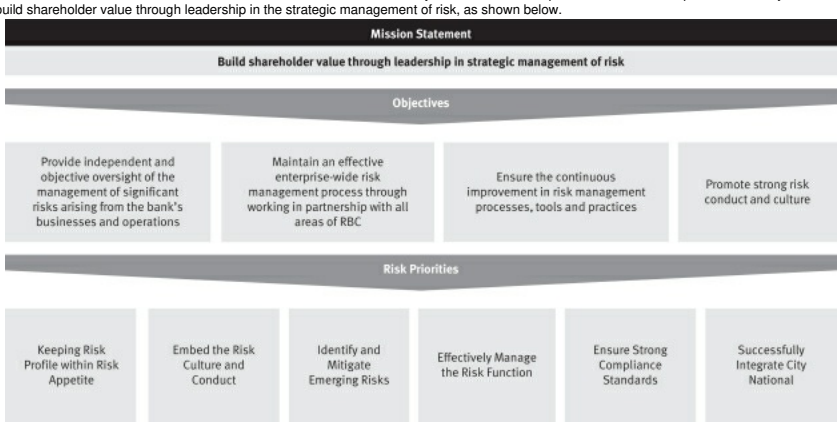
We provide guarantees and commitments to our clients that expose us to liquidity and funding risks. Our maximum potential amount of future payments in relation to our commitments and guarantee products as at October 31, 2015 amounted to $315 billion compared to $259 billion last year. The increase compared to last year relates primarily to business growth and the impact of exchange rate fluctuations in other credit-related commitments and securities lending indemnifications. Refer to Liquidity and funding risk and Note 26 to our audited 2015 Annual Consolidated Financial Statements for details regarding our guarantees and commitments.

## Risk management

### Overview

The ability to manage risk well is a core competency at RBC, and is supported by strong Risk Conduct and Culture, and an effective risk management approach. RBC defines risk as the potential for loss or an undesirable outcome with respect to volatility of actual earnings in relation to expected earnings, capital adequacy or liquidity. Organizational design and governance processes ensure that our Group Risk Management (GRM) function is independent from the businesses it supports.

We manage our risks by seeking to ensure that business activities and transactions provide an appropriate balance of return for the risks assumed and remain within our Risk Appetite, which is collectively managed throughout RBC, through adherence to our Enterprise Risk Appetite Framework. Our major risk categories include credit, market, liquidity, insurance, operational, regulatory compliance, strategic, reputation, legal and regulatory environment, competitive, and systemic risk. In order to avoid excessive concentration of risks, we strive to diversify our business lines, products and sector exposures. Our objectives and the corresponding priorities are guided by GRM's mission statement, which is to build shareholder value through leadership in the strategic management of risk, as shown below.




**2015 Accomplishments**

Throughout 2015, we have continued to take a prudent approach to risk management, as evidenced by the fact that we:

- Kept our Risk Profile within Risk Appetite despite economic challenges
- Maintained strong credit quality with a PCL as a percentage of average net loans and acceptances ratio of 24 bps, lower than in 2014 and 2013
- Maintained strong credit ratings
- Avoided major operational risk events
- Ensured sound management of regulatory compliance risk
- Further enhanced stress-testing capabilities
- Increased focus on Risk Conduct and Culture

**Risk management principles**

The following general principles apply to the management of risk at RBC:

1. **Effective balancing of risk and reward** by aligning business strategy with Risk Appetite, avoiding excessive concentration of risk through diversification, pricing appropriately for risk, mitigating risk through preventive and detective controls and transferring risk to third parties.
2. **Shared responsibility for risk management** as business segments are responsible for active management of their risks, with direction and oversight provided by GRM and other corporate functions groups.
3. **Business decisions are based on an understanding of risk** as we perform rigorous assessment of risks in relationships, products, transactions and other business activities.
4. **Avoid activities that are not consistent with our values, Code of Conduct or policies** , which contributes to the protection of our reputation.
5. **Proper focus on clients reduces our risks** by knowing our clients and ensuring that all products and transactions are suitable for and understood by our clients.
6. **Use of judgment and common sense** in order to manage risk throughout the organization.
7. **Be operationally prepared for a potential crisis** in order to maintain agility and readiness to respond to potential disruptors to the financial industry.

## Top and emerging risks

Our view of risks is not static. An important component of our enterprise risk management approach is to ensure that top risks which are evolving or emerging risks are appropriately identified, managed, and incorporated into existing enterprise risk management assessment, measurement, monitoring and escalation processes.

These practices ensure management is forward-looking in its assessment of risks to the organization. Identification of top and emerging risks occurs in the course of businesses developing and pursuing approved strategies and as part of the execution of risk oversight responsibilities by GRM, Finance, Corporate Treasury, Global Compliance and other control functions.

Top and emerging risks occur as a result of exogenous factors, such as changes in the macroeconomic or regulatory environment, or endogenous factors, such as changes to our strategic imperatives, or failure to adapt to an evolving competitive or operational environment.

A top risk is an existing, significant risk that can potentially affect our earnings or capital within a one-year time horizon.

An emerging risk has a lower probability of occurring within a one-year horizon, but, in the event it materializes, can have a significant adverse impact on our ability to achieve our goals.

| Top risks | Emerging risks |
|---|---|
| Weak oil and gas prices | Financial instability arising from the growth of the shadow banking system |
| High levels of Canadian household debt | Increased exposure to central clearing counterparties |
| Cybersecurity | Disruptive financial technology companies |
| Fraud | Conduct risk |
| Anti-Money Laundering | Litigation risk |
| Processing and execution risk | Increasing complexity of regulation |
| Exposure to more volatile sectors | |

Details of the more pressing top and emerging risks we are facing are discussed below.

*Weak oil and gas prices*

Oil prices have continued to be low throughout 2015 and are forecast to remain depressed in the near future. This has had a severe, direct impact on the energy sector and has led, indirectly, to a softening of the housing market in Alberta. We have performed a number of low oil price stress tests, which focus specifically on the impact to our retail and wholesale portfolios. While we could see a rise in PCL, the overall magnitude depends upon how long oil prices stay low and how our corporate clients undertake management actions of their own. In our view, our exposure to weak oil and gas prices remains within our risk appetite.

*High levels of Canadian household debt*

Canadian household debt remains elevated as persistently low interest rates continue to fuel strong home sales, supporting home prices and contributing to an upward trend in mortgage credit growth. The risks surrounding elevated credit balances largely stem from households' continued ability to manage existing debt repayments when interest rates rise and a greater share of disposable income is needed to make payments. Additional risk stems from the potential for high household debt to amplify the impact of an external shock to the Canadian economy and/or extended downturn in domestic activity. The combination of increasing unemployment, rising interest rates, and a downturn in real estate markets would pose a risk to the credit quality of our retail lending portfolio. We actively manage our lending portfolios and stress test them against various scenarios. Our stress testing shows that the vast majority of our mortgage clients have sufficient capacity to absorb interest rate increases in the ranges currently forecasted. For further discussion relating to our retail portfolio, refer to the Credit risk section.

*Cybersecurity*

Cybersecurity has become an increasingly problematic issue, not only for the financial services sector, but for other industries in Canada and around the globe. Cyber-attacks in the industry are increasing in sophistication and are often focused on compromising sensitive data for inappropriate use or disrupting business operations. Such an attack could compromise our confidential information as well as that of our clients and third parties with whom we interact and may result in negative consequences, including remediation costs, loss of revenue, additional regulatory scrutiny, litigation and reputational damage. As a result, RBC continually monitors for malicious threats and adapts accordingly in an effort to ensure we maintain high privacy and security standards. The bank leverages and invests in advancements in cyber defense technologies to support our business model, protect our systems and enhance the experience of our clients on a global basis by employing industry best practices and provide our customers with confidence in their financial transactions. Our investments continue to manage the risks we face today and position the bank for the evolving threat landscape.

*Anti-Money Laundering*

RBC is subject to a dynamic set of anti-money laundering/anti-terrorist financing, economic sanctions and anti-bribery/anti-corruption (AML) laws and regulations across the multiple jurisdictions in which we operate. As the scope of criminal activities such as tax evasion, human trafficking, bribery and corruption continues to expand, regulators worldwide are intensifying regulatory requirements and increasing enforcement actions and penalties for those who fail to comply. As a consequence, money laundering, terrorist financing, economic sanctions violations, bribery and corruption (Money Laundering) pose significant legal, regulatory, financial and reputational risk to RBC. We are committed to the management of AML risk and have implemented advanced and evolving AML policies, processes and controls (Global AML Program) to mitigate the risk of Money Laundering activities and meet our regulatory obligations to deter, detect and report such activities. RBC has appointed a Senior Vice President, Financial Crimes and Chief Anti-Money Laundering Officer who is responsible for the independent oversight and implementation of the Global AML Program. The Global AML Program addresses our changing business activities, regulatory requirements and international best practices. RBC continuously enhances transaction monitoring, client due diligence and risk assessment processes and

practices to prevent or detect activities that pose potential risk to RBC. Internally, annual AML training is mandatory for all applicable employees, including senior management and the Board of Directors, to help ensure compliance and to educate on emerging AML trends. We meet our regulatory obligation to perform independent effectiveness testing by conducting regular assessments on the adequacy of the Global AML Program.

*Exposure to more volatile sectors*
Our wholesale loan growth has been strong in recent years, largely driven by Capital Markets. Demand for lending related to commercial real estate and leveraged financing has been particularly strong. To manage risks associated with this increase, we focus on diversification, driven by limits on single name, country and industry exposures across all businesses, portfolios and transactions. We continue to adhere to strict lending standards as we grow our wholesale credit portfolio. We also stress test our portfolio to assist in evaluating the potential impact of severe economic conditions.

## Enterprise risk management

Under the oversight of the Board of Directors and Senior Management, the Enterprise Risk Management Framework provides an overview of our enterprise-wide programs for managing risk, including identifying, assessing, measuring, controlling, monitoring and reporting on the significant risks that face the organization. While Risk Appetite encompasses "what" risks RBC is able and willing to take, Risk Conduct and Culture articulates "how" we expect to take those risks.

**Risk governance**
The Risk Governance model at RBC is well-established. The Board of Directors oversees the implementation of our risk management framework, establishes the tone at the top, approves our Risk Appetite, provides oversight and carries out its risk management mandate primarily through its committees which include the Risk Committee, the Audit Committee, the Governance Committee and the Human Resources Committee.

The purpose of the Risk Committee is to oversee our risk management program. The Risk Committee's oversight role is designed to ensure that the risk management function is adequately independent from the businesses whose activities it reviews, and that the policies, procedures and controls used by management are sufficient to keep risks within our Risk Appetite.

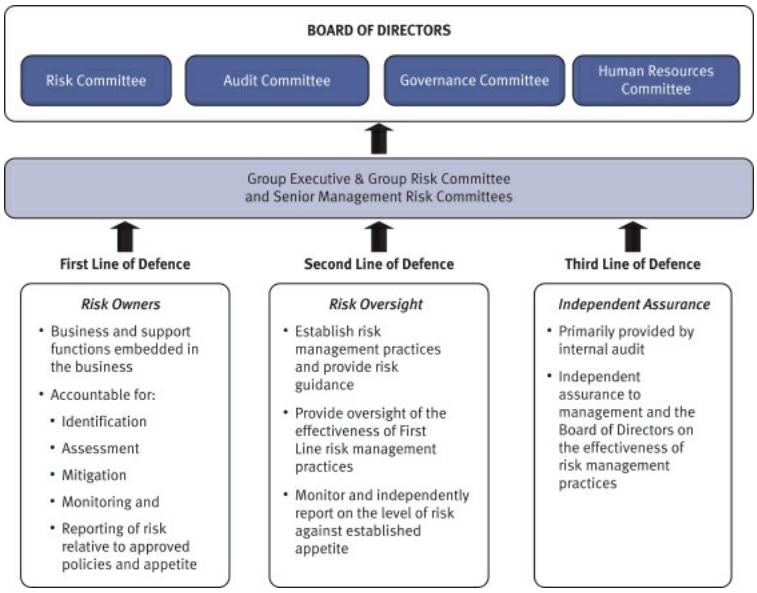
The Audit Committee also has a risk oversight role through its responsibilities to review our internal controls and the control environment, and to ensure that policies related to capital management and adequacy are in place and effective. The Audit Committee regularly reviews reporting on legal and regulatory compliance risks, including significant litigation issues.

The Governance Committee monitors the effectiveness of our corporate governance, reviews policies and programs, is responsible for the Code of Conduct, reviews our efforts to understand and meet changing public values and expectations, and identifies, assesses and advises management on public affairs issues related to our image and reputation.

The Human Resources Committee, along with the Risk Committee, actively oversees the design and operation of our compensation system.

The Group Executive (GE) is comprised of our senior management team and is led by the President & Chief Executive Officer (CEO) and includes the Chief Risk Officer (CRO) and Chief Administrative Officer & Chief Financial Officer (CAO & CFO). The GE is responsible for our strategy and its execution. The GE actively shapes and recommends our Risk Appetite for approval by the Board of Directors. The GE's risk oversight role is executed primarily through the mandate of the Group Risk Committee (GRC). The GRC, with the assistance of its supporting senior management risk committees, is responsible for ensuring that our overall Risk Profile is consistent with our strategic objectives and remains within our Risk Appetite and that there are ongoing, appropriate and effective risk management processes.

Employees at all levels of the organization are responsible for managing the day-to-day risks that arise in the context of their mandate. As shown below, RBC uses a Three Lines of Defence Governance Model to manage risks across the enterprise.



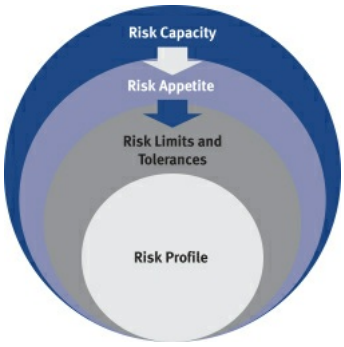

**Risk Appetite**

Our Risk Appetite is the amount and type of risk we are able and willing to accept in the pursuit of our business objectives. Our approach to articulating Risk Appetite is focused around three key concepts:

- The amount of Earnings at Risk that is determined to be acceptable over an economic cycle, using an expected future loss lens;
- The amount of Capital at Risk that is determined to be acceptable under stress, using an unexpected future loss lens; and
- Ensuring adequate liquidity throughout times of stress.

Our Risk Appetite Framework has several major components as follows:

- Define our Risk Capacity by identifying regulatory constraints that restrict our ability to accept risk.
- Establish and regularly confirm our Risk Appetite, comprised of drivers that are the business objectives which include risks we must accept to generate desired financial returns, and self-imposed constraints that limit or otherwise influence the amount of risk undertaken. Our self-imposed constraints include:
  - Manage exposure to future losses
  - Manage volatility of earnings
  - Avoid excessive concentrations of risk
  - Low exposure to stress events
  - Ensure sound management of liquidity and funding risk
  - Ensure sound management of regulatory compliance risk and operational risk
  - Ensure capital adequacy by maintaining capital ratios in excess of rating agencies' and regulatory expectations
  - Maintain strong credit ratings
  - Maintain Risk Profile that is in the top half of our peer group
- Set Risk Limits and Tolerances to ensure that risk-taking activities are within Risk Appetite.
- Assess our Risk Posture to confirm whether our strategic priorities entail taking on more risk over a one year time frame, using a scale of contracting, stable or expanding.
- Regularly measure and evaluate our Risk Profile, representing the risks we are exposed to, relative to our Risk Appetite, and ensure appropriate action is taken to prevent Risk Profile from surpassing Risk Appetite.



The Enterprise Risk Appetite Framework is structured in such a way that it can be applied at the enterprise, business segment, business unit, and legal entity levels. Risk Appetite is integrated into our business strategies and capital plan. We also ensure that the business strategy aligns with the enterprise and business segment level Risk Appetite.

**Risk Conduct and Culture**
We define Risk Conduct and Culture as a shared set of behavioural norms that sustain our core values, protect our clients, safeguard our shareholders' value, and support market integrity and stability from undue risk.

The following elements are foundational to our effective Risk Conduct and Culture:

- Communicate expectations in a highly visible, clear, consistent and ongoing manner – "Tone from the top"
- Hold people accountable across all businesses in accordance with the Three Lines of Defence governance model – "Accountability"
- Enable the right motivations by rewarding individuals and groups for taking the right risks in an informed manner – "Incentives"
- Effective communication of risk issues – "Constructive challenge"
- Provide escalation paths
- Take the right risks in order to keep Risk Profile within Risk Appetite




The desired Risk Conduct and Culture flows from RBC Values, Code of Conduct and Risk Management Principles, which include:

- Integrity
- Accountability for risk management
- Compliance with risk policies
- Integration of risk in decision-making
- Timely escalation and reporting of risk issues
- Communication of risk issues

Our enterprise risk management practices have led to the integration of risk disciplines into decision-making and all other key business processes. For example, our compensation programs and practices are risk-based and designed to reinforce desired risk behaviours and disincent risk-taking outside of risk limits. Compensation programs align with sound risk management principles and sustainable performance.

Risk metrics are increasingly integrated into how employees are compensated, assessed and developed:

- Risk-adjusted performance metrics are in place for senior management through to all direct reports of business line heads and business unit heads.
- Talent management and succession planning at senior levels consider risk competencies and experience.
- The approach to considering Risk Conduct and Culture as one of the criteria for promotion continues to evolve across individual businesses.
- Proportionate consequences and disciplinary actions are used to address compliance violations or policy breaches quickly and consistently across the organization, with an enterprise-wide, global approach established via the Code of Conduct governance requirements.

**Risk measurement**
Our ability to measure risks is a key component of our enterprise-wide risk and capital management processes. Certain measurement methodologies are common to a number of risk types, while others only apply to a single risk type. While quantitative risk measurement is important, we also place reliance on qualitative factors. Our measurement models and techniques are continually subject to independent assessment for appropriateness and reliability. For those risk types that are difficult to quantify, we place greater emphasis on qualitative risk factors and assessment of activities to gauge the overall level of risk to ensure that they are within our Risk Appetite. In addition, judgmental risk measures can still be developed, and techniques such as stress testing, and scenario and sensitivity analyses can also be used to assess and measure risks.

*Quantifying expected loss*
Expected loss is used to assess earnings at risk and is a representation of losses that are statistically expected to occur in the normal course of business in a given period of time. For credit risk, the key parameters used to measure our exposure to expected loss are probability of default, loss given default, and exposure at default. For market risk, a statistical technique known as Value-at-Risk (VaR) is used to measure losses under normal market conditions.

*Quantifying unexpected loss*
Unexpected loss is used to assess capital at risk and is a statistical estimate of the amount by which actual losses can exceed expected loss over a specified time horizon, measured at a specified level of confidence. We hold capital to withstand these unexpected losses, should they occur. For further details, refer to the Capital management section.

*Stress testing*
Stress testing examines potential impacts arising from exceptional but plausible adverse events, and is an important component of our risk management framework. Stress testing results are used in:

- Monitoring our Risk Profile relative to Risk Appetite in terms of earnings and capital at risk;
- Setting limits;
- Identifying key risks to and potential shifts in our capital and liquidity levels, and our financial position;
- Enhancing our understanding of available mitigating actions in response to adverse events; and
- Assessing the adequacy of our target capital levels.

Our enterprise-wide stress tests evaluate key balance sheet, income statement, leverage, capital, and liquidity impacts arising from risk exposures and changes in earnings. The results are used by the GRC, the Board of Directors and senior management risk committees to understand our performance drivers under stress, and review stressed capital, leverage, and liquidity ratios against regulatory thresholds and internal targets. The results are also incorporated into our Internal Capital Adequacy Assessment Process (ICAAP) and Capital Plan analyses.

We annually evaluate a number of enterprise-wide stress scenarios over a multi-year horizon, featuring a range of severities. Our Board of Directors reviews the recommended scenarios, and GRM leads the scenario assessment process. Results from across the organization are integrated to develop an enterprise-wide view of the impacts, with input from subject matter experts in GRM, Corporate Treasury, Finance, and Economics. Recent scenarios evaluated include global recessions, Canadian recessions, and energy price shocks.

Ongoing stress testing and scenario analyses within specific risk types such as market risk, liquidity risk, structural interest rate risk, retail and wholesale credit risk, operational risk, and insurance risk supplement and support our enterprise-wide analyses. Results from these risk-specific programs are used in a variety of decision-making processes including risk limit setting, portfolio composition evaluation, Risk Appetite articulation, and business strategy implementation.

In addition to ongoing enterprise-wide and risk specific stress testing programs, we also use ad-hoc and reverse stress testing to deepen our knowledge of the risks we face. Ad-hoc stress tests are one-off analyses used to investigate developing conditions or stress a particular portfolio in more depth. Reverse stress tests, starting with a severe outcome and aiming to reverse-engineer scenarios that might lead to it, are used in risk identification and understanding of risk/return boundaries.

In addition to internal stress tests, we participate in a number of regulator-required stress test exercises at both the consolidated and subsidiary levels.

*Back-testing*

We back-test many market and credit risk parameters, including Probability of default, Loss given default, and Usage given default. Back-testing is performed on a quarterly basis by comparing the realized values to the parameter estimates that are currently used to ensure the parameters remain appropriate for regulatory and economic capital calculations.

*Validation of measurement models*

We widely use models for many purposes, including valuation of financial products and the measurement and management of different types of risk. Models are subject to validation by qualified employees that are sufficiently independent of the model design and development, or by approved external parties. Model validation is a comprehensive independent review of a model that evaluates the applicability of the model's logic, its assumptions and theoretical underpinnings, the appropriateness of input data sources, the interpretation of the model results, and the strategic use of the model outputs. By reviewing and evaluating a model's assumptions and limitations, initial and ongoing model validation helps ensure the model incorporates current market developments and industry trends. Our model validation process is designed to ensure that all material underlying model risk factors are identified and successfully mitigated.

**Risk control**

Our enterprise-wide risk management approach is supported by a comprehensive set of risk controls. The controls are anchored by our Enterprise Risk Management and Risk-Specific Frameworks. These frameworks lay the foundation for the development and communication of policies, establishment of formal risk review and approval processes, and the establishment of delegated authorities and limits. The implementation of robust risk controls enables the optimization of risk and return on both a portfolio and a transactional basis.

Our risk management frameworks and policies are organized into the following five levels:

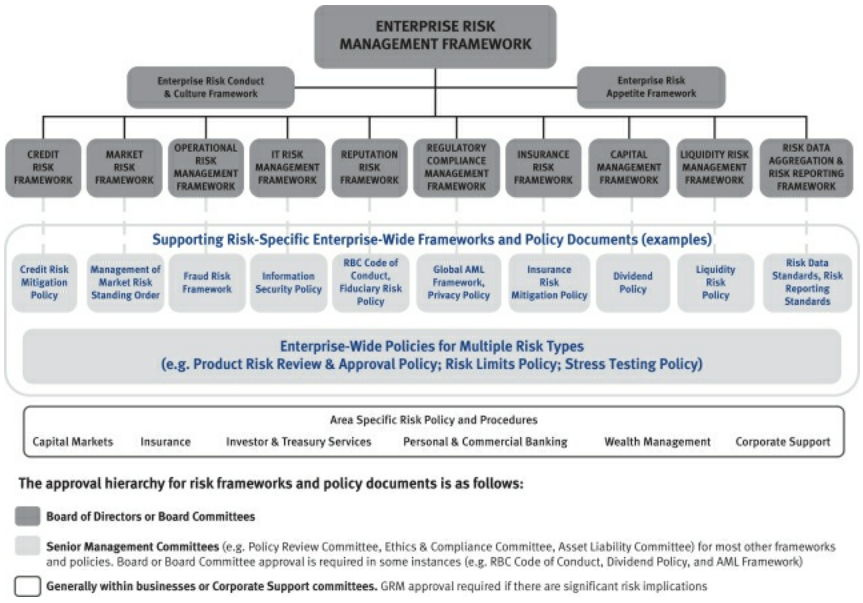
**Level 1: Enterprise Risk Management Framework** provides an overview of our enterprise-wide program for identifying, assessing, measuring, controlling, monitoring and reporting on the significant risks we face. This framework is underpinned by our Risk Appetite Framework and Risk Conduct and Culture Framework.

**Level 2: Risk-Specific Frameworks** elaborate on each specific risk type and the mechanisms for identifying, measuring, monitoring and reporting of our principal risks; key policies; and roles and responsibilities.

**Level 3: Enterprise Risk Policies** articulate minimum requirements, within which businesses and employees must operate.

**Level 4: "Multi-risk" Enterprise Risk Policies** govern activities such as product risk review and approval, stress testing, risk limits, risk approval authorities and model risk management.

**Level 5: Business Segments and Corporate Support – Specific Policies and Procedures** are established to manage the risks that are unique to their operations.




*Risk review and approval processes*
Risk review and approval processes are established by GRM based on the nature, size and complexity of the risk involved. In general, the risk review and approval process involves a formal review and approval by an individual, group or committee that is independent from the originator. The approval responsibilities are governed by delegated authorities based on the following categories: transactions, structured credit, projects and initiatives, and new products and services.

*Authorities and limits*
The Risk Committee of the Board of Directors delegates credit, market and insurance risk authorities to the President & CEO and the CRO. The delegated authorities allow these officers to approve single name, geographic (country and region) and industry sector exposures within defined parameters to manage concentration risk, establish underwriting and inventory limits for trading and investment banking activities and set market risk tolerances.

The Board of Directors also delegates liquidity risk authorities to the President & CEO, CAO & CFO, and CRO. These limits act as a key risk control designed to ensure that reliable and cost-effective sources of cash or its equivalent are available to satisfy our current and prospective commitments.

*Reporting*
Enterprise and business segment level risk monitoring and reporting are critical components of our enterprise risk management program and support the ability of senior management and the Board of Directors to effectively perform their risk management and oversight responsibilities. On a quarterly basis, we provide to senior management and the Board of Directors the Enterprise Risk Report which includes a comprehensive review of our Risk Profile relative to our Risk Appetite and focuses on the range of risks we face along with an analysis of the related issues and trends. In addition to our regular risk monitoring, other risk specific presentations are provided to and discussed with senior management and the Board of Directors on top and emerging risks or changes in our Risk Profile.

**Risk Pyramid**
We use a pyramid to identify and categorize our principal risks. The Risk Pyramid provides a common language and discipline for the identification and assessment of risk in existing businesses, new businesses, products or initiatives, and acquisitions and alliances. It is maintained by GRM and reviewed regularly to ensure all key risks are reflected and ranked appropriately.

The placement of the principal risks within the Risk Pyramid is a function of two primary criteria:

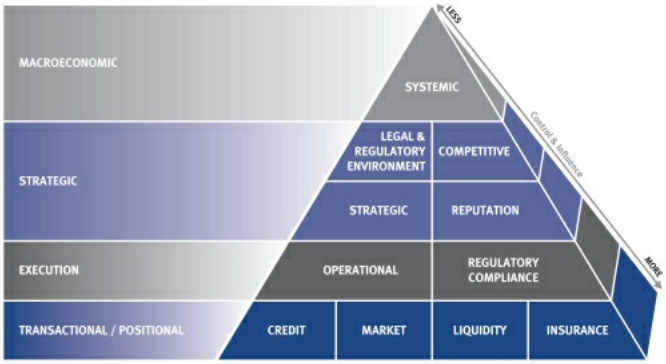
- *Risk Drivers* – Key factors that would have a strong influence on whether or not one or more of our risks will materialize. We have identified four key risk drivers: Macroeconomic, Strategic, Execution and Transactional / Positional; and
- *Control and Influence* – The risk types are organized vertically from the top of the pyramid to its base according to the relative degree of control and influence RBC is considered to have over each risk type.

*Risk Drivers*

- Macroeconomic: Adverse changes in the macroeconomic environment in which we operate can lead to a partial or total collapse of the real economy or the financial system in any of the regions in which we have a presence. Examples include a rapid deterioration in the Canadian housing market, a severe North American recession, and a downturn in China.
- Strategic: The strategic choices we make in terms of business mix will determine how our risk profile changes. Examples include credit portfolio mix, acquisitions, responding to the threats posed by non-traditional competitors, and responding to proposed changes in the regulatory framework.
- Execution: The complexity and scope of our operations across the globe exposes us to operational and regulatory compliance risks, including fraud, anti-money laundering, cybersecurity and conduct/fiduciary risk.
- Transactional/Positional: This driver of risk presents a more traditional risk perspective. This involves the risk of credit or market losses arising from the lending transactions and balance sheet positions we undertake every day.

*The base of the pyramid* – The risk categories along the base of the Risk Pyramid are those over which we have the greatest level of control and influence. We understand these risks and earn revenue by taking them. These are credit, market, liquidity and insurance risks. Operational risk and regulatory compliance risk, while still viewed as risks over which we have greater level of control and influence, are ranked higher on the pyramid than the other highly controllable risks. This ranking acknowledges the level of controllability associated with people, systems and external events.

*The top of the pyramid* – Systemic risk is placed at the top of the Risk Pyramid, and is generally considered the least controllable type of risk arising from the business environment impacting us. However, we have in place measures for mitigating the impacts of systemic risk such as stress testing programs and diversification. We are diversified across various business models, funding sources, products and geographies. Legal and regulatory environment and competitive risks, which can be viewed as somewhat controllable, can be influenced through our role as a corporate entity, and as an active participant in the Canadian and global financial services industry.




The shaded text along with the tables specifically marked with an asterisk(*) in the following sections of the MD&A represent our disclosures on credit, market and liquidity and funding risks in accordance with IFRS 7 , *Financial Instruments: Disclosures*, and include discussion on how we measure our risks and the objectives, policies and methodologies for managing these risks. Therefore, these shaded text and tables represent an integral part of our 2015 Annual Consolidated Financial Statements.

## Credit risk

Credit risk is the risk of loss associated with an obligor's potential inability or unwillingness to fulfill its contractual obligations. Credit risk may arise directly from the risk of default of a primary obligor (e.g. issuer, debtor, counterparty, borrower or policyholder), or indirectly from a secondary obligor (e.g. guarantor or reinsurer). Credit risk includes counterparty credit risk from both trading and non-trading activities.

The failure to effectively manage credit risk across all our products, services and activities can have a direct, immediate and material impact on our earnings and reputation.

We balance our risk and return by:

- Ensuring credit quality is not compromised for growth;
- Diversifying credit risks in transactions, relationships and portfolios;
- Using our credit risk rating and scoring systems or other approved credit risk assessment or rating methodologies, policies and tools;
- Pricing appropriately for the credit risk taken;
- Applying consistent credit risk exposure measurements;
- Mitigating credit risk through preventive and detective controls;
- Transferring credit risk to third parties, where appropriate, through approved credit risk mitigation techniques, including hedging activities and insurance coverage; and
- Ongoing credit risk monitoring and administration.

**Risk measurement – Credit risk**

We quantify credit risk, at both the individual obligor and portfolio levels, to manage expected credit losses in order to limit earnings volatility and minimize unexpected losses.

We employ different risk measurement processes for our wholesale and retail credit portfolios. The wholesale portfolio comprises businesses, sovereigns, public sector entities, banks and other financial institutions, and certain individuals and small businesses that are managed on an individual client basis. The retail portfolio is comprised of residential mortgages, personal, credit card, and small business loans, which are managed on a pooled basis. Credit risk rating systems are designed to assess and quantify the risk inherent in credit activities in an accurate and consistent manner.

In measuring credit risk and setting regulatory capital, two principal approaches are available: Internal Ratings Based Approach (IRB) and Standardized Approach. Most of our credit risk exposure is measured under the IRB.

Economic capital, which is our internal quantification of risks, is used extensively for performance measurement, limit setting and internal capital adequacy.

The key parameters that form the basis of our credit risk measures for both regulatory and economic capital are:

- Probability of default (PD): An estimated percentage that represents the likelihood of default within a given time period of an obligor for a specific rating grade or for a particular pool of exposure.
- Exposure at default (EAD): An amount expected to be owed by an obligor at the time of default.
- Loss given default (LGD): An estimated percentage of EAD that is not expected to be recovered during the collections and recovery process.

These parameters are determined based primarily on historical experience from internal credit risk rating systems in accordance with supervisory standards, and are independently validated and updated on a regular basis.

Under the Standardized Approach, used primarily for Investor Services and our Caribbean and U.S. banking operations, risk-weights prescribed by the Office of the Superintendent of Financial Institutions (OSFI) are used to calculate risk-weighted assets (RWA) for credit risk exposure.

*Wholesale credit risk*

The wholesale credit risk rating system is designed to measure the credit risk inherent in our wholesale credit activities.

Each obligor is assigned a borrower risk rating (BRR), reflecting an assessment of the credit quality of the obligor. Each BRR has a PD assigned to it. The BRR differentiates the riskiness of obligors and represents our evaluation of the obligor's ability and willingness to meet its contractual obligations on time over a three year time horizon. The assignment of BRRs is based on the evaluation of the obligor's business risk and financial risk and is based on fundamental credit analysis. The determination of the PD associated with each BRR relies primarily on internal default history since the early 2000s augmented where necessary with reference to external data. PD estimates are designed to be a conservative reflection of our experience across the economic cycle including periods of stress or economic downturn.

Our rating system is designed to stratify obligors into 22 grades, consistent with the external rating agencies. The following table aligns the relative rankings of our 22-grade internal risk ratings with the ratings used by S&P and Moody's.

**Internal ratings map*** **Table 43**

| Ratings | BRR | S&P | Moody's | Description |
|---|---|---|---|---|
| 1 | 1+ | AAA | Aaa | Investment Grade |
| 2 | 1H | AA+ | Aa1 | |
| 3 | 1M | AA | Aa2 | |
| 4 | 1L | AA- | Aa3 | |
| 5 | 2+H | A+ | A1 | |
| 6 | 2+M | A | A2 | |
| 7 | 2+L | A- | A3 | |
| 8 | 2H | BBB+ | Baa1 | |
| 9 | 2M | BBB | Baa2 | |
| 10 | 2L | BBB- | Baa3 | |
| 11 | 2-H | BB+ | Ba1 | Non-investment Grade |
| 12 | 2-M | BB | Ba2 | |
| 13 | 2-L | BB- | Ba3 | |
| 14 | 3+H | B+ | B1 | |
| 15 | 3+M | B | B2 | |
| 16 | 3+L | B- | B3 | |
| 17 | 3H | CCC+ | Caa1 | |
| 18 | 3M | CCC | Caa2 | |
| 19 | 3L | CCC- | Caa3 | |
| 20 | 4 | CC | Ca | |
| 21 | 5 | C | C | Impaired |
| 22 | 6 | Bankruptcy | Bankruptcy | |

* This table represents an integral part of our 2015 Annual Consolidated Financial Statements.

Each credit facility is assigned an LGD rate. LGD rates are largely driven by factors that will impact the extent of any losses in the event the obligor defaults including seniority of debt, collateral security, and the industry sector in which the obligor operates. Estimated LGD rates draw primarily on internal loss experience since the late 1990s. Where we have limited internal loss data we also look to external data to inform the estimation. LGD rates are estimated to reflect conditions that might be expected to prevail in a period of an economic downturn, with additional conservatism added to reflect data limitations and judgments made in the estimation process.

EAD is estimated based on the current exposure to the obligor and the possible future changes in that exposure driven by factors such as the nature of the credit commitment and the type of obligor. As with LGD, rates are estimated to reflect downturn conditions, with added conservatism to reflect data and modeling uncertainty.

Estimates of PD, LGD and EAD are updated, and then validated and back-tested by an independent team within the bank, on an annual basis. In addition, quarterly monitoring and back-testing is performed by the estimation team. These ratings and risk measurements are used in the determination of our expected losses as well as economic and regulatory capital, setting of risk limits, portfolio management and product pricing.

*Counterparty credit risk*

Counterparty credit risk is the risk that a party with whom the bank has entered into a financial or non-financial contract will fail to fulfill its contractual agreement and default on the obligation. It is measured not only by its current value, but also by how this value can move as market conditions change. Counterparty credit risk usually occurs in trading-related derivative and repo-style transactions.

Derivative transactions include financial (e.g. forwards, futures, swaps and options) and non-financial derivatives (e.g. precious metal and commodities). For further details on our derivative instruments and credit risk mitigation, refer to Note 8 of our 2015 Annual Consolidated Financial Statements.

*Retail credit risk*

Credit scoring is the primary risk rating system for assessing obligor and transaction risk for retail (scored) exposures. Credit scores along with decision strategies are employed in the acquisition of new clients and management of existing clients.

Retail exposures are managed on a pooled basis, with each pool consisting of a group or segment of exposures that possess similar homogeneous characteristics. Criteria used to pool exposures for risk quantification include behavioural score, product type (mortgages, credit cards, lines of credit and instalment loans), collateral type (chattel, liquid assets and real estate), utilization rate, loan-to-value, and the delinquency status (performing, delinquent and default) of the exposure. Regular monitoring and periodic adjustments & alignments are conducted to ensure that this process provides for a meaningful differentiation of risk.

The pools are also assessed based on credit risk parameters (PD and EAD) which consider borrower and transaction characteristics, including behavioural credit score, product type, utilization rate and delinquency status. LGD estimation is based on transaction specific factors, including product, loan-to-value and collateral types. All parameters are determined based on over 10 years of historical economic losses with the highest degree of granularity and sufficient margins of conservatism. Parameters are back-tested regularly and validated by an independent team within the bank.

The following table maps PD bands to various risk levels:

**Internal ratings map*** **Table 44**

| PD bands | Description |
|---|---|
| 0.000% – 1.718% | Low risk |
| 1.719% – 6.430% | Medium risk |
| 6.431% – 99.99% | High risk |
| 100% | Impaired/Default |

* This table represents an integral part of our 2015 Annual Consolidated Financial Statements.

**Risk control – Credit risk**

The Board of Directors and its committees, the GE, the GRC and other senior management risk committees work together to ensure a Credit Risk Management Framework and supporting policies, processes and procedures exist to manage credit risk and approve related credit risk limits. Reports are distributed to the Board of Directors, the GRC, and senior executives to keep them informed of our Risk Profile, including trending information and significant credit risk issues and shifts in exposures to ensure appropriate actions can be taken where necessary. Our enterprise-wide credit risk policies set out the minimum requirements for the management of credit risk in a variety of borrower, transactional and portfolio management contexts.

Credit policies are an integral component of our Credit Risk Management Framework and set out the minimum requirements for the management of credit risk as follows:

**Credit risk assessment**

- Mandatory use of credit risk rating and scoring systems.
- Consistent credit risk assessment criteria.
- Standard content requirements in credit application documents.

**Credit risk mitigation**

*Structuring of transactions*

- Specific credit policies and procedures set out the requirements for structuring transactions. Risk mitigants include the use of guarantees, collateral, seniority, loan-to-value requirements and covenants. Product-specific guidelines set out appropriate product structuring as well as client and guarantor criteria.

*Collateral*

- We often require obligors to pledge collateral as security when we advance credit. The extent of risk mitigation provided by collateral depends on the amount, type and quality of the collateral taken. Specific requirements relating to collateral valuation and management are documented in our credit risk management policies. The types of collateral used to secure credit or trading facilities within the bank are varied. For example, the majority of our Securities Finance and over-the-counter (OTC) derivatives activities are secured by cash and liquid Organisation for Economic Co-operation and Development (OECD) government securities. Wholesale lending is often secured by pledges of the assets of a business, such as accounts receivable, inventory, operating assets and commercial real estate. In our Canadian Banking business and Wealth Management segment, collateral typically consists of a pledge over a real estate property, or a portfolio of debt securities and equities trading on a recognized exchange.
- We are compliant with regulatory requirements that govern residential mortgage underwriting practices, including loan-to-value parameters and property valuation requirements. For further information regarding the quality of collateral used to secure residential mortgages, refer to table 53.

*Credit derivatives*

- Used as a tool to mitigate industry sector concentration and single-name exposure. For a more detailed description of the types of credit derivatives we enter into and how we manage related credit risk, refer to Note 8 of our 2015 Annual Consolidated Financial Statements.

**Loan forbearance**

In our overall management of borrower relationships, economic or legal reasons may necessitate forbearance to certain clients with respect to the original terms and conditions of their loans. We strive to identify borrowers in financial difficulty early and modify their loan terms in order to maximize collection and to avoid foreclosure, repossession, or other legal remedies. In these circumstances, a borrower may be granted concessions that would not otherwise be considered. We have specialized groups and formalized policies that direct the management of delinquent or defaulted borrowers. Examples of such concessions to retail borrowers may include rate reduction, principal forgiveness, and term extensions. Concessions to wholesale borrowers may include restructuring the agreements, modifying the original terms of the agreement and/or relaxation of covenants. For both retail and wholesale loans, the appropriate remediation techniques are based on the individual borrower's situation, the Bank's policy and the customer's willingness and capacity to meet the new arrangement. When a loan is restructured, the recorded investment in the loan is reduced as of the date of restructuring to the amount of the net cash flows receivable under the modified terms, discounted at the effective interest rate inherent in the loan (prior to restructuring). During 2015, the amount of loans restructured was not significant.

**Product approval**

- Proposals for credit products and services are comprehensively reviewed and approved under a risk assessment framework.

**Credit portfolio management**

- Concentration risk is defined as the risk arising from an over-concentration on single names, industry sectors, countries or credit products within the portfolio. Concentration risk results from large exposure to similar risks that are positively correlated such that their ability to meet contractual obligations could be similarly affected by changes in economic, political or other conditions.
- We manage credit exposures and limits to ensure alignment with Risk Appetite, to maintain our target business mix and to ensure that there is no undue risk concentration. Credit concentration limits are reviewed on a regular basis taking into account the business, economic, financial and regulatory environments.
- Our credit limits are established at the following levels: single name limits (notional and economic capital), underwriting risk limits, leveraged lending limits, geographic (country and region) limits (notional and economic capital), industry sector limits (notional and economic capital), and product and portfolio limits, where deemed necessary.

**Gross credit risk exposure**

Gross credit risk exposure is calculated based on the definitions provided under the Basel III framework. Under this method, risk exposure is calculated before taking into account any collateral and is inclusive of an estimate of potential future changes to that credit exposure. Gross credit risk is categorized into lending-related and other, and trading-related.

Lending-related and other includes:

- Loans and acceptances outstanding, undrawn commitments, and other exposures including contingent liabilities such as letters of credit and guarantees, available-for-sale (AFS) debt securities and deposits with financial institutions. Undrawn commitments represent an estimate of the contractual amount that may be drawn upon at the time of default of an obligor.

Trading-related credit includes:

- Repo-style transactions which include repurchase and reverse repurchase agreements and securities lending and borrowing transactions. For repo-style transactions, gross exposure represents the amount at which securities were initially financed, before taking into account collateral.
- Derivative amount which represents the credit equivalent amount, which is defined by OSFI as the replacement cost plus an add-on amount for potential future credit exposure.

**Gross credit risk exposure by portfolio and sector*** **Table 45**

As at

| | October 31 2015 | | | | | | October 31 2014 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lending-related and other | | | Trading-related | | | Lending-related and other | | | Trading-related | | |
| | Loans and acceptances | | | | | | Loans and acceptances | | | | | |
| (Millions of Canadian dollars) | Outstanding | Undrawn commitments (1) | Other (2) | Repo-style transactions | Derivatives (3) | Total exposure (4) | Outstanding | Undrawn commitments (1) | Other (2) | Repo-style transactions | Derivatives (3) | Total exposure (4) |
| Residential mortgages | $ 233,975 | $ – | $ 206 | $ – | $ – | $ 234,181 | $ 219,257 | $ – | $ 197 | $ – | $ – | $ 219,454 |
| Personal | 94,346 | 78,885 | 154 | – | – | 173,385 | 96,021 | 83,965 | 154 | – | – | 180,140 |
| Credit cards | 15,859 | 24,827 | – | – | – | 40,686 | 14,924 | 21,689 | – | – | – | 36,613 |
| Small business (5) | 4,003 | 5,370 | 9 | – | – | 9,382 | 4,067 | 4,631 | 9 | – | – | 8,707 |
| **Retail** | $ 348,183 | $ 109,082 | $ 369 | $ – | $ – | $ 457,634 | $ 334,269 | $ 110,285 | $ 360 | $ – | $ – | $ 444,914 |
| Business (5) | | | | | | | | | | | | |
| Agriculture | $ 6,057 | $ 1,279 | $ 80 | $ – | $ 86 | $ 7,502 | $ 5,694 | $ 1,079 | $ 55 | $ – | $ 51 | $ 6,879 |
| Automotive | 6,614 | 5,104 | 407 | – | 984 | 13,109 | 6,209 | 4,880 | 299 | – | 697 | 12,085 |
| Consumer goods | 7,146 | 7,093 | 594 | – | 470 | 15,303 | 7,172 | 6,189 | 547 | – | 281 | 14,189 |
| Energy | | | | | | | | | | | | |
| Oil & Gas | 7,691 | 13,274 | 1,330 | – | 839 | 23,134 | 5,849 | 10,921 | 1,410 | – | 409 | 18,589 |
| Utilities | 5,162 | 13,389 | 3,149 | 60 | 1,482 | 23,242 | 3,766 | 11,240 | 1,943 | – | 1,169 | 18,118 |
| Non-bank financial services | 6,428 | 13,060 | 18,002 | 201,845 | 29,769 | 269,104 | 5,688 | 9,775 | 13,414 | 160,514 | 23,290 | 212,681 |
| Forest products | 1,169 | 535 | 108 | – | 40 | 1,852 | 979 | 452 | 108 | – | 18 | 1,557 |
| Industrial products | 4,725 | 5,418 | 513 | – | 538 | 11,194 | 4,665 | 4,753 | 441 | – | 462 | 10,321 |
| Mining & metals | 1,402 | 3,883 | 906 | – | 255 | 6,446 | 1,320 | 2,870 | 876 | – | 174 | 5,240 |
| Real estate & related | 33,802 | 9,210 | 1,910 | 63 | 373 | 45,358 | 30,387 | 7,791 | 1,699 | 22 | 286 | 40,185 |
| Technology & media | 6,599 | 14,182 | 574 | 6 | 1,703 | 23,064 | 4,822 | 8,705 | 511 | 2 | 955 | 14,995 |
| Transportation & environment | 5,907 | 4,300 | 2,960 | – | 1,474 | 14,641 | 5,432 | 3,624 | 1,702 | – | 810 | 11,568 |
| Other | 35,133 | 17,166 | 15,620 | 4,915 | 15,386 | 88,220 | 26,604 | 13,345 | 8,379 | 3,490 | 13,800 | 65,618 |
| Sovereign (5) | 9,887 | 5,614 | 57,413 | 30,871 | 10,162 | 113,947 | 4,628 | 5,303 | 47,798 | 25,863 | 8,170 | 91,762 |
| Bank (5) | 1,800 | 1,015 | 86,106 | 102,371 | 27,221 | 218,513 | 1,201 | 710 | 73,365 | 94,824 | 22,724 | 192,824 |
| **Wholesale** | $ 139,522 | $ 114,522 | $189,672 | $ 340,131 | $ 90,782 | $ 874,629 | $ 114,416 | $ 91,637 | $ 152,547 | $ 284,715 | $ 73,296 | $ 716,611 |
| **Total exposure** | $ 487,705 | $ 223,604 | $190,041 | $ 340,131 | $ 90,782 | $ 1,332,263 | $ 448,685 | $ 201,922 | $ 152,907 | $ 284,715 | $ 73,296 | $ 1,161,525 |

* This table represents an integral part of our 2015 audited Annual Consolidated Financial Statements.

(1) Undrawn commitments represent an estimate of the contractual amount that may be drawn upon at the time of default of an obligor.

(2) Includes credit equivalent amounts for contingent liabilities such as letters of credit and guarantees, outstanding amounts for AFS debt securities, deposits with financial institutions and other assets.

(3) Credit equivalent amount after factoring in master netting agreements.

(4) Gross credit risk exposure is before allowance for loan losses. Exposures under Basel III asset classes of qualifying revolving retail and other retail are largely included within Personal and Credit cards, while HELOC are included in Personal.

(5) Refer to Note 5 of our audited 2015 Annual Consolidated Financial Statements for the definitions of these terms.

**2015 vs. 2014**

Total gross credit risk exposure increased $171 billion or 15% from last year, primarily reflecting an increase in repo-style transactions and growth in loans and acceptances.

Retail exposure increased $13 billion or 3%, mainly due to volume growth in Canadian residential mortgages and credit cards, partly offset by a decrease in personal loans and acceptances. Wholesale exposure increased $158 billion or 22%, primarily attributable to an increase in repo-style transactions, higher loans and acceptances reflecting growth across various industry sectors, and an increase in Other exposure related to letters of credit and guarantees, AFS securities and deposits with central banks. The impact of foreign exchange translation also contributed to the increase. Wholesale loan utilization was 37% which remained unchanged from last year.

**Gross credit risk exposure by geography*** (1) **Table 46**

| | As at | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **October 31 2015** | | | | | | October 31 2014 | | | | | |
| | **Lending-related and other** | | | **Trading-related** | | | Lending-related and other | | | Trading-related | | |
| | **Loans and acceptances** | | | | | | Loans and acceptances | | | | | |
| (Millions of Canadian dollars) | **Outstanding** | **Undrawn commitments** | **Other** | **Repo-style transactions** | **Derivatives** | **Total exposure** | Outstanding | Undrawn commitments | Other | Repo-style transactions | Derivatives | Total exposure |
| Canada | **$ 414,427** | **$ 144,352** | **$ 70,774** | **$ 64,855** | **$ 27,272** | **$ 721,680** | $ 390,221 | $ 142,841 | $ 63,060 | $ 56,308 | $ 21,649 | $ 674,079 |
| U.S. | **40,186** | **60,031** | **50,915** | **179,021** | **14,023** | **344,176** | 28,325 | 43,270 | 23,487 | 150,549 | 12,536 | 258,167 |
| Europe | **17,706** | **15,574** | **52,294** | **58,900** | **44,480** | **188,954** | 15,348 | 13,091 | 47,904 | 52,501 | 34,222 | 163,066 |
| Other International | **15,386** | **3,647** | **16,058** | **37,355** | **5,007** | **77,453** | 14,791 | 2,720 | 18,456 | 25,357 | 4,889 | 66,213 |
| **Total Exposure** | **$ 487,705** | **$ 223,604** | **$190,041** | **$ 340,131** | **$ 90,782** | **$1,332,263** | $ 448,685 | $ 201,922 | $152,907 | $ 284,715 | $ 73,296 | $1,161,525 |

* This table represents an integral part of our 2015 audited Annual Consolidated Financial Statements.

(1) Geographic profile is based on country of residence of the borrower.

**2015 vs. 2014**

Total gross credit risk exposure increased $171 billion or 15% from last year, primarily reflecting an increase in repo-style transactions and the impact of foreign exchange translation.

Canada exposure increased $48 billion or 7% compared to the prior year, primarily due to higher loans and acceptances and growth in repo-style transactions.

U.S. exposure increased $86 billion or 33% compared to the prior year, mainly due to growth in repo-style transactions, an increase in other exposure, and the impact of foreign exchange translation.

Europe exposure increased $26 billion or 16% compared to the prior year, mainly due to growth in derivatives, repo-style transactions, and the impact of foreign exchange translation.

Other International increased $11 billion or 17% compared to the prior year, mainly reflecting growth in repo-style transactions, and the impact of foreign exchange translation.

**Loans and acceptances outstanding and undrawn commitments*** (1), (2) **Table 47**

| | As at | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **October 31 2015** | | | | | October 31 2014 | | | | |
| (Millions of Canadian dollars) | **Low risk** | **Medium risk** | **High risk** | **Impaired** | **Total** | Low risk | Medium risk | High risk | Impaired | Total |
| **Retail** (3) | | | | | | | | | | |
| Residential mortgages | **$218,151** | **$ 13,080** | **$ 2,098** | **$ 646** | **$233,975** | $206,699 | $ 9,452 | $ 2,428 | $ 678 | $ 219,257 |
| Personal | **157,996** | **12,020** | **2,916** | **299** | **173,231** | 158,530 | 17,309 | 3,847 | 300 | 179,986 |
| Credit cards | **34,547** | **4,772** | **1,367** | **–** | **40,686** | 29,900 | 5,403 | 1,310 | – | 36,613 |
| Small business | **6,878** | **1,047** | **1,403** | **45** | **9,373** | 6,542 | 1,519 | 1,308 | 47 | 9,416 |
| **Total** | **$417,572** | **$ 30,919** | **$ 7,784** | **$ 990** | **$457,265** | $401,671 | $33,683 | $ 8,893 | $ 1,025 | $ 445,272 |

| | As at | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **October 31 2015** | | | | October 31 2014 | | | |
| (Millions of Canadian dollars) | **Investment grade** | **Non-Investment grade** | **Impaired** | **Total** | Investment grade | Non-investment grade | Impaired | Total |
| **Wholesale** (4) | | | | | | | | |
| Business | **$ 105,871** | **$ 128,564** | **$ 1,293** | **$ 235,728** | $ 82,714 | $ 109,829 | $ 950 | $ 193,493 |
| Sovereign | **14,704** | **797** | **–** | **15,501** | 9,476 | 455 | – | 9,931 |
| Bank | **2,475** | **338** | **2** | **2,815** | 1,440 | 469 | 2 | 1,911 |
| **Total** | **$ 123,050** | **$ 129,699** | **$ 1,295** | **$ 254,044** | $ 93,630 | $ 110,753 | $ 952 | $ 205,335 |

* This table represents an integral part of our audited 2015 Annual Consolidated Financial Statements.

(1) This table represents our retail and wholesale loans and acceptances outstanding and undrawn commitments by portfolio and risk category.

(2) The amounts in the table are before allowance for impaired loans.

(3) Includes undrawn commitments of $nil, $78.9 billion, $24.8 billion, and $5.4 billion for Residential mortgages, Personal, Credit cards and Small business, respectively.

(4) Includes undrawn commitments of $107.9 billion, $5.6 billion, and $1.0 billion for Business, Sovereign and Bank, respectively.

**2015 vs. 2014**

Growth in retail exposures was largely attributable to the low risk category primarily reflecting growth in residential mortgages and credit cards. Growth in wholesale exposures was mainly due to loan growth in both the investment grade and non-investment grade categories.

**European exposure** **Table 48**

| (Millions of Canadian dollars) | As at October 31 2015 Loans and acceptances: Outstanding | Loans and acceptances: Undrawn commitments (1) | Other: Securities (2) | Other: Letters of credit and guarantees | Repo-style transactions | Derivatives | Total European exposure | October 31 2014 Total European exposure |
|---|---|---|---|---|---|---|---|---|
| **Gross exposure to Europe** | **$ 17,706** | **$ 15,574** | **$ 24,480** | **$ 27,814** | **$ 58,900** | **$ 44,480** | **$ 188,954** | $ 163,066 |
| Less: Collateral held against repo-style transactions | **–** | **–** | **–** | **–** | **57,674** | **–** | **57,674** | 51,386 |
| Potential future credit exposure add-on amount | **–** | **–** | **–** | **–** | **–** | **29,875** | **29,875** | 22,403 |
| Undrawn commitments | **–** | **15,574** | **–** | **27,814** | **–** | **–** | **43,388** | 38,079 |
| **Gross drawn exposure to Europe** | **$ 17,706** | **$ –** | **$ 24,480** | **$ –** | **$ 1,226** | **$ 14,605** | **$ 58,017** | $ 51,198 |
| Less: Collateral applied against derivatives | **–** | **–** | **–** | **–** | **–** | **10,721** | **10,721** | 8,249 |
| Add: Trading securities | **–** | **–** | **12,797** | **–** | **–** | **–** | **12,797** | 15,471 |
| **Net exposure to Europe** (3) | **$ 17,706** | **$ –** | **$ 37,277** | **$ –** | **$ 1,226** | **$ 3,884** | **$ 60,093** | $ 58,420 |

(1) These amounts are comprised of $12.3 billion to corporate entities, $2.6 billion to financial entities and $0.5 billion to sovereign entities. On a country basis, exposure is comprised of $7.0 billion to the U.K., $2.5 billion to France, $1.9 billion to Germany, $0.6 billion to Ireland, $0.3 billion to Spain, and $0.1 billion to Italy, with the remaining $3.1 billion related to Other Europe. Of the undrawn commitments, over 80% are to investment grade entities.
(2) Securities include $12.8 billion of trading securities (2014 – $15.5 billion), $11.5 billion of deposits (2014 – $11.9 billion), and $13.0 billion of AFS securities (2014 – $11.0 billion).
(3) Excludes $2.6 billion (2014 – $2.8 billion) of exposures to supranational agencies.

Our gross credit risk exposure is calculated based on the definitions provided under the Basel III framework whereby risk exposure is calculated before taking into account any collateral and inclusive of an estimate of potential future changes to that credit exposure. On that basis, our total European exposure as at October 31, 2015 was $189 billion. Our gross drawn exposure to Europe was $58 billion, after taking into account collateral held against repo-style transactions of $58 billion, letters of credit and guarantees, and undrawn commitments for loans of $43 billion and potential future credit exposure to derivatives of $30 billion. Our net exposure to Europe was $60 billion, after taking into account $11 billion of collateral, primarily in cash, we hold against derivatives and the addition of trading securities of $13 billion held in our trading book. Our net exposure to Europe also reflected $1.8 billion of mitigation through credit default swaps, which are largely used to hedge single name exposures and market risk.

**Net European exposure by country** (1) **Table 49**

| (Millions of Canadian dollars) | As at October 31 2015 Loans outstanding | Securities | Repo-style transactions | Derivatives | Total | October 31 2014 Total |
|---|---|---|---|---|---|---|
| U.K. | **$ 10,330** | **$ 8,372** | **$ 867** | **$ 1,395** | **$ 20,964** | $ 24,033 |
| Germany | **1,142** | **7,789** | **4** | **561** | **9,496** | 10,172 |
| France | **446** | **3,426** | **56** | **605** | **4,533** | 4,284 |
| **Total U.K., Germany, France** | **$ 11,918** | **$ 19,587** | **$ 927** | **$ 2,561** | **$ 34,993** | $ 38,489 |
| Greece | **$ –** | **$ –** | **$ –** | **$ –** | **$ –** | $ – |
| Ireland | **1,138** | **66** | **47** | **68** | **1,319** | 883 |
| Italy | **45** | **42** | **–** | **13** | **100** | 150 |
| Portugal | **8** | **1** | **–** | **–** | **9** | 9 |
| Spain | **337** | **60** | **–** | **42** | **439** | 476 |
| **Total Peripheral** (2) | **$ 1,528** | **$ 169** | **$ 47** | **$ 123** | **$ 1,867** | $ 1,518 |
| Luxembourg | **$ 586** | **$ 4,250** | **$ 3** | **$ 51** | **$ 4,890** | $ 1,909 |
| Netherlands | **1,014** | **3,211** | **30** | **728** | **4,983** | 4,260 |
| Norway | **427** | **4,431** | **–** | **28** | **4,886** | 3,011 |
| Sweden | **273** | **3,012** | **79** | **12** | **3,376** | 2,731 |
| Switzerland | **523** | **1,007** | **98** | **125** | **1,753** | 3,557 |
| Other | **1,437** | **1,610** | **42** | **256** | **3,345** | 2,945 |
| **Total Other Europe** | **$ 4,260** | **$ 17,521** | **$ 252** | **$ 1,200** | **$ 23,233** | $ 18,413 |
| **Total exposure to Europe** | **$ 17,706** | **$ 37,277** | **$ 1,226** | **$ 3,884** | **$ 60,093** | $ 58,420 |

(1) Geographic profile is based on country of risk, which reflects our assessment of the geographic risk associated with a given exposure. Typically, this is the residence of the borrower.
(2) Gross credit risk exposure to peripheral Europe is comprised of Greece $nil (2014 – $nil), Ireland $11.7 billion (2014 – $2.5 billion), Italy $0.3 billion (2014 – $0.2 billion), Portugal $nil (2014 – $nil), and Spain $1.2 billion (2014 – $0.9 billion).

**2015 vs. 2014**

Net credit risk exposure to Europe increased $1.7 billion from last year, largely driven by increased exposure in Luxembourg, Norway and the Netherlands, partially offset by a decrease in the U.K., Switzerland and Germany. Our net exposure to peripheral Europe, which includes Greece, Ireland, Italy, Portugal and Spain, remained minimal, with total outstanding exposure increasing $0.3 billion during the year to $1.9 billion.

Our exposure was predominantly investment grade. Our net exposure to larger European countries, including the U.K., Germany and France, was primarily related to our capital markets, wealth management, and investor services businesses, particularly in fixed income, treasury services, derivatives, and corporate and individual lending. These are predominantly client-driven businesses where we transact with a range of European financial institutions, corporations, and individuals. In addition, we engage in primary dealer activities in the U.K., where we participate in auctions of government debt and act as a market maker and provide liquidity to clients. Exposures to other European countries are largely related to securities which include trading securities, deposits, and AFS securities.

Our trading securities are related to both client market-making activities and our funding and liquidity management needs. All of our trading securities are marked-to-market on a daily basis. Deposits are primarily related to deposits with central banks or financial institutions and also included deposits related to our wealth management business in the Channel Islands. AFS securities are largely comprised of OECD government and corporate debt. Our European corporate loan book is managed on a global basis and the underwriting standards for this loan book reflect the same approach to the use of our balance sheet as we have applied in both Canada and the U.S. Our PCL on this portfolio was nominal for this year. The gross impaired loans ratio of this loan book was 0.6%, up from 0.12% from last year.

**Net European exposure by client type** **Table 50**

| | As at | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **October 31 2015** | | | | | | | | | | | | October 31 2014 |
| (Millions of Canadian dollars) | **U.K.** | **Germany** | **France** | **Total U.K., Germany, France** | **Greece** | **Ireland** | **Italy** | **Portugal** | **Spain** | **Total Peripheral** | **Other Europe** | **Total Europe** | Total Europe |
| Financials | **$ 7,453** | **$ 6,853** | **$ 813** | **$ 15,119** | **$ –** | **$ 148** | **$ 65** | **$ –** | **$ 31** | **$ 244** | **$ 12,472** | **$27,835** | $ 24,641 |
| Sovereign | **4,347** | **837** | **3,125** | **8,309** | **–** | **3** | **–** | **–** | **103** | **106** | **6,400** | **14,815** | 17,527 |
| Corporate | **9,164** | **1,806** | **595** | **11,565** | **–** | **1,168** | **35** | **9** | **305** | **1,517** | **4,361** | **17.443** | 16,252 |
| **Total** | **$20,964** | **$ 9,496** | **$ 4,533** | **$ 34,993** | **$ –** | **$ 1,319** | **$100** | **$ 9** | **$ 439** | **$ 1,867** | **$ 23,233** | **$60,093** | $ 58,420 |

**2015 vs. 2014**

Our net exposure to Financials increased $3.2 billion mainly due to increases in the U.K. and Other Europe, partially offset by a decrease in France. The net exposure to Sovereign decreased $2.7 billion, mainly due to decreases in U.K. and Germany, partially offset by increases in Other Europe and France. The increase in Corporate of $1.2 billion was largely in Other Europe and Ireland.

**Residential mortgages and home equity lines of credit (insured vs. uninsured)**
Residential mortgages and home equity lines of credit are secured by residential properties. The following table presents a breakdown by geographic region:

**Residential mortgages and home equity lines of credit** **Table 51**

| (Millions of Canadian dollars, except percentage amounts) | As at October 31, 2015 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Residential mortgages (1) | | | | | | Home equity lines of credit (2) | |
| | Insured (3) | | Uninsured | | Total | | Total | |
| **Region (4)** | | | | | | | | |
| **Canada** | | | | | | | | |
| **Atlantic provinces** | **$ 6,856** | **55%** | **$ 5,586** | **45%** | **$ 12,442** | | **$ 2,060** | |
| **Quebec** | **12,414** | **46** | **14,621** | **54** | **27,035** | | **4,157** | |
| **Ontario** | **36,555** | **39** | **58,036** | **61** | **94,591** | | **16,785** | |
| **Prairie provinces** | **27,562** | **53** | **24,597** | **47** | **52,159** | | **9,940** | |
| **B.C. and territories** | **15,755** | **36** | **27,555** | **64** | **43,310** | | **9,085** | |
| **Total Canada (5)** | **$ 99,142** | **43%** | **$ 130,395** | **57%** | **$ 229,537** | | **$ 42,027** | |
| **U.S.** | **(1)** | **–** | **773** | **100** | **772** | | **334** | |
| **Other International** | **14** | **–** | **3,202** | **100** | **3,216** | | **3,107** | |
| **Total International** | **$ 13** | **–%** | **$ 3,975** | **100%** | **$ 3,988** | | **$ 3,441** | |
| **Total** | **$ 99,155** | **42%** | **$ 134,370** | **58%** | **$ 233,525** | | **$ 45,468** | |

| (Millions of Canadian dollars, except percentage amounts) | As at October 31, 2014 | | | | | | |
|---|---|---|---|---|---|---|---|
| | Residential mortgages (1) | | | | | | Home equity lines of credit (2) |
| | Insured (3) | | Uninsured | | Total | | Total |
| Region (4) | | | | | | | |
| Canada | | | | | | | |
| Atlantic provinces | $ 6,411 | 55% | $ 5,169 | 45% | $ 11,580 | | $ 2,068 |
| Quebec | 13,006 | 50 | 13,248 | 50 | 26,254 | | 4,163 |
| Ontario | 35,354 | 40 | 51,974 | 60 | 87,328 | | 17,104 |
| Prairie provinces | 25,813 | 53 | 22,826 | 47 | 48,639 | | 10,310 |
| B.C. and territories | 15,585 | 38 | 25,887 | 62 | 41,472 | | 9,768 |
| Total Canada (5) | $ 96,169 | 45% | $ 119,104 | 55% | $ 215,273 | | $ 43,413 |
| U.S. | 4 | 1 | 535 | 99 | 539 | | 332 |
| Other International | 13 | – | 3,081 | 100 | 3,094 | | 2,691 |
| Total International | $ 17 | –% | $ 3,616 | 100% | $ 3,633 | | $ 3,023 |
| Total | $ 96,186 | 44% | $ 122,720 | 56% | $ 218,906 | | $ 46,436 |

(1) The residential mortgages amounts exclude our third-party mortgage-backed securities (MBS) of $450 million (2014 – $351 million).
(2) Home equity lines of credit includes revolving and non-revolving loans.
(3) Insured residential mortgages are mortgages whereby our exposure to default is mitigated by insurance through the Canada Mortgage and Housing Corporation (CMHC) or other private mortgage default insurers.
(4) Region is based upon address of the property mortgaged. The Atlantic provinces are comprised of Newfoundland and Labrador, Prince Edward Island, Nova Scotia and New Brunswick, the Prairie provinces are comprised of Manitoba, Saskatchewan and Alberta, and B.C. and territories are comprised of British Columbia, Nunavut, Northwest Territories and Yukon.
(5) Total consolidated residential mortgages in Canada of $230 billion (2014 – $215 billion) is largely comprised of $205 billion (2014 – $192 billion) of residential mortgages and $5 billion (2014 – $5 billion) of mortgages with commercial clients of which $3 billion (2014 – $3 billion) are insured mortgages, both in Canadian Banking, and $19 billion (2014 – $18 billion) of residential mortgages in Capital Markets held for securitization purposes.

Home equity lines of credit are uninsured and reported within the personal loan category. As at October 31, 2015, home equity lines of credit in Canadian Banking were $42 billion (2014 – $43 billion). Approximately 98% of these home equity lines of credit (2014 – 97%) are secured by a first lien on real estate, and 8% (2014 – 8%) of the total homeline clients pay the scheduled interest payment only.

**Residential mortgages portfolio by amortization period**
The following table provides a summary of the percentage of residential mortgages that fall within the remaining amortization periods based upon current customer payment amounts, which incorporate payments larger than the minimum contractual amount and/or higher frequency of payments:

**Residential mortgages portfolio by amortization period** — **Table 52**

| | As at | | | | | |
|---|---|---|---|---|---|---|
| | **October 31 2015** | | | October 31 2014 | | |
| | **Canada** | **U.S. and Other International** | **Total** | Canada | U.S. and Other International | Total |
| **Amortization period** | | | | | | |
| £ 25 years | **75%** | **77%** | **75%** | 71% | 74% | 71% |
| > 25 years £ 30 years | **23** | **23** | **23** | 23 | 26 | 23 |
| > 30 years £ 35 years | **2** | **–** | **2** | 5 | – | 5 |
| > 35 years | **–** | **–** | **–** | 1 | – | 1 |
| **Total** | **100%** | **100%** | **100%** | 100% | 100% | 100% |

**Average loan-to-value (LTV) ratio for newly originated and acquired uninsured residential mortgages and homeline products**
The following table provides a summary of our average LTV ratio for newly originated and acquired uninsured residential mortgages and homeline products by geographic region:

**Average LTV ratio** — **Table 53**

| | **2015** | | 2014 | |
|---|---|---|---|---|
| | **Uninsured** | | Uninsured | |
| | **Residential mortgages** (1) | **Homeline products** (2) | Residential mortgages (1) | Homeline products (2) |
| Region (3) | | | | |
| Atlantic provinces | **74%** | **75%** | 74% | 74% |
| Quebec | **71** | **73** | 71 | 73 |
| Ontario | **70** | **70** | 71 | 71 |
| Prairie provinces | **73** | **74** | 74 | 73 |
| B.C. and territories | **69** | **66** | 69 | 67 |
| U.S. | **72** | **n.m.** | 71 | n.m. |
| Other International | **61** | **n.m.** | 60 | n.m. |
| Average of newly originated and acquired for the year (4), (5) | **71%** | **70%** | 72% | 71% |
| Total Canadian Banking residential mortgages portfolio | **55%** | **54%** | 55% | 55% |

(1) Residential mortgages excludes residential mortgages within the homeline products.
(2) Homeline products are comprised of both residential mortgages and home equity lines of credit.
(3) Region is based upon address of the property mortgaged. The Atlantic provinces are comprised of Newfoundland and Labrador, Prince Edward Island, Nova Scotia and New Brunswick, the Prairie provinces are comprised of Manitoba, Saskatchewan and Alberta, and B.C. and territories are comprised of British Columbia, Nunavut, Northwest Territories and Yukon.
(4) The average LTV ratio for newly originated and acquired uninsured residential mortgages and homeline products is calculated on a weighted basis by mortgage amounts at origination.
(5) For newly originated mortgages and homeline products, LTV is calculated based on the total facility amount for the residential mortgage and homeline product divided by the value of the related residential property.
n.m. not meaningful

While the above table provides the LTV ratios for the current year originations, the LTV ratio on our outstanding balances of the entire Canadian Banking uninsured residential mortgages, including homeline products, is 54% as at October 31, 2015 (2014 – 55%). This calculation is weighted by mortgage balances and adjusted for property values based on the Teranet – National Bank National Composite House Price Index.

We employ a risk-based approach to property valuation. Property valuation methods include automated valuation models (AVM) and appraisals. An AVM is a tool that estimates the value of a property by reference to market data including sales of comparable properties and price trends specific to the Metropolitan Statistical Area in which the property being valued is located. Using a risk-based approach, we also employ appraisals which can include drive-by or full on-site appraisals.

We continue to actively manage our entire mortgage portfolio and perform stress testing, based on a combination of increasing unemployment, rising interest rates, and a downturn in real estate markets. Our stress test results indicate the vast majority of our residential mortgage and homeline clients have sufficient capacity to continue making payments in the event of a shock to one of the above noted parameters.

**Credit quality performance**

| Provision for (recovery of) credit losses | | Table 54 |
|---|---|---|
| (Millions of Canadian dollars, except percentage amounts) | **2015** | 2014 |
| Personal & Commercial Banking | **$ 984** | $ 1,103 |
| Wealth Management | **46** | 19 |
| Capital Markets | **71** | 44 |
| Corporate Support and Other (1) | **(4)** | (2) |
| **Total PCL** | **$ 1,097** | $ 1,164 |
| Canada (2) | | |
| Residential mortgages | **$ 27** | $ 27 |
| Personal | **393** | 393 |
| Credit cards | **371** | 345 |
| Small business | **32** | 44 |
| Retail | **823** | 809 |
| Wholesale | **116** | 123 |
| PCL on impaired loans | **939** | 932 |
| U.S. (2) | | |
| Retail | **$ 1** | $ 2 |
| Wholesale | **40** | 40 |
| PCL on impaired loans | **41** | 42 |
| Other International (2) | | |
| Retail | **$ 21** | $ 121 |
| Wholesale | **96** | 69 |
| PCL on impaired loans | **117** | 190 |
| **Total PCL** | **$ 1,097** | $ 1,164 |
| PCL ratio (3) | | |
| Total PCL ratio | **0.24%** | 0.27% |
| Personal & Commercial Banking | **0.27%** | 0.31% |
| Canadian Banking | **0.25%** | 0.27% |
| Caribbean Banking | **0.85%** | 2.44% |
| Wealth Management | **0.26%** | 0.12% |
| Capital Markets | **0.09%** | 0.07% |

(1) PCL in Corporate Support and Other primarily comprised of PCL for loans not yet identified as impaired. For further information, refer to the How we measure and report our business segments section.
(2) Geographic information is based on residence of borrower.
(3) PCL on impaired loans as a % of average net loans and acceptances.

**2015 vs. 2014**

Total PCL decreased $67 million, or 6%, from a year ago. The PCL ratio of 24 bps decreased 3 bps.

PCL in Personal & Commercial Banking decreased $119 million or 11%, and the PCL ratio of 27 bps decreased 4 bps, mainly due to lower provisions in our Caribbean portfolios partially due to provisions of $50 million in the prior year on our Caribbean impaired residential mortgage portfolio. Lower provisions in the current year related to our commercial lending portfolios also contributed to the decrease. These factors were partially offset by higher write-offs in our credit cards portfolio.

PCL in Wealth Management increased $27 million, mainly due to provisions related to our U.S. & International Wealth Management business.

PCL in Capital Markets increased $27 million or 61%, mainly due to provisions in the oil and gas, consumer goods, and utilities sectors.

| Gross impaired loans (GIL) | | Table 55 |
|---|---|---|
| (Millions of Canadian dollars, except percentage amounts) | **2015** | 2014 |
| Personal & Commercial Banking | **$ 1,809** | $ 1,913 |
| Wealth Management | **178** | 11 |
| Capital Markets | **296** | 50 |
| Investor & Treasury Services | **2** | 2 |
| Corporate Support and Other | **–** | 1 |
| **Total GIL** | **$ 2,285** | $ 1,977 |
| Canada (1) | | |
| Retail | **$ 624** | $ 659 |
| Wholesale | **512** | 487 |
| GIL | **1,136** | 1,146 |
| U.S. (1) | | |
| Retail | **$ 10** | $ 13 |
| Wholesale | **204** | 18 |
| GIL | **214** | 31 |
| Other International (1) | | |
| Retail | **$ 356** | $ 353 |
| Wholesale | **579** | 447 |
| GIL | **935** | 800 |
| **Total GIL** | **$ 2,285** | $ 1,977 |
| Impaired loans, beginning balance | **1,977** | 2,201 |
| Classified as impaired during the year (new impaired) (2) | **1,709** | 1,317 |
| Net repayments (2) | **(158)** | (228) |
| Amounts written off | **(1,338)** | (1,329) |
| Other (2), (3) | **95** | 16 |
| **Impaired loans, balance at end of year** | **2,285** | 1,977 |
| GIL ratio (4) | | |
| Total GIL ratio | **0.47%** | 0.44% |
| Personal & Commercial Banking | **0.49%** | 0.55% |
| Canadian Banking | **0.30%** | 0.33% |
| Caribbean Banking | **9.13%** | 11.05% |
| Wealth Management | **1.01%** | 0.07% |
| Capital Markets | **0.37%** | 0.08% |

(1) Geographic information is based on residence of borrower.
(2) Certain GIL movements for Canadian Banking retail and wholesale portfolios are generally allocated to New Impaired, as Return to performing status, Net repayments, Sold, and Exchange and other movements amounts are not reasonably determinable. Certain GIL movements for Caribbean Banking retail and wholesale portfolios are generally allocated to repayments and new Impaired, as Return to performing status, Sold, and Exchange and other movements amounts are not reasonably determinable.
(3) Includes Return to performing status during the year, Recoveries of loans and advances previously written off, Sold, and Exchange and other movements.
(4) GIL as a % of loans and acceptances.

**2015 vs. 2014**

Total GIL increased $308 million or 16% from a year ago. The GIL ratio of 47 bps increased 3 bps.

GIL in Personal & Commercial Banking decreased $104 million or 5%, mainly due to lower impaired loans in our commercial lending and residential mortgages portfolios.

GIL in Wealth Management increased $167 million, mainly due to higher impaired loans in the U.S. & International Wealth Management business.

GIL in Capital Markets increased $246 million, primarily due to higher impaired loans in the oil and gas, utilities, and consumer goods sectors.

| Allowance for credit losses (ACL) | | Table 56 |
|---|---|---|
| (Millions of Canadian dollars) | **2015** | 2014 |
| Allowance for impaired loans | | |
| Personal & Commercial Banking | **$ 548** | $ 602 |
| Wealth Management | **43** | 10 |
| Capital Markets | **61** | 18 |
| Investor & Treasury Services | **2** | 2 |
| **Total allowance for impaired loans** | **654** | 632 |
| Canada (1) | | |
| Retail | **$ 142** | $ 143 |
| Wholesale | **111** | 160 |
| Allowance for impaired loans | **253** | 303 |
| U.S. (1) | | |
| Retail | **$ 1** | $ 1 |
| Wholesale | **47** | 16 |
| Allowance for impaired loans | **48** | 17 |
| Other International (1) | | |
| Retail | **$ 169** | $ 172 |
| Wholesale | **184** | 140 |
| Allowance for impaired loans | **353** | 312 |
| **Total allowance for impaired loans** | **654** | 632 |
| Allowance for loans not yet identified as impaired | **1,466** | 1,453 |
| **Total ACL** | **$2,120** | $ 2,085 |

(1) Geographic information is based on residence of borrower.

**2015 vs. 2014**
Total ACL increased $35 million or 2% from a year ago, mainly related to higher ACL in Capital Markets and Wealth Management consistent with higher PCL recorded in the current year. This was partially offset by lower ACL in Personal & Commercial Banking consistent with lower PCL recorded in the current year.

## Market risk

Market risk is defined to be the impact of market prices upon our financial condition. This includes potential gains or losses due to changes in market determined variables such as interest rates, credit spreads, equity prices, commodity prices, foreign exchange rates and implied volatilities.

The measures of financial condition impacted by market risk are as follows:

1. Positions whose revaluation gains and losses are reported in Revenue, which includes:
   a) Changes in the fair value of instruments classified or designated as at fair value through profit and loss (FVTPL),
   b) Impairment on AFS securities, and
   c) Hedge ineffectiveness.
2. CET1 capital, which includes:
   a) All of the above, plus
   b) Changes in the fair value of AFS securities where revaluation gains and losses are reported as other comprehensive income,
   c) Changes in the Canadian dollar value of investments in foreign subsidiaries, net of hedges, due to foreign exchange translation, and
   d) Remeasurements of employee benefit plans, including pension fund assets underperforming in the market resulting in a deficit and volatility between the pension liabilities and the fund assets, and/or, estimated actuarial parameters not being realized such that pension liabilities exceed pension fund assets.
3. CET1 ratio, which includes:
   a) All of the above, plus
   b) Changes in risk-weighted assets (RWA) resulting from changes in traded market risk factors, and
   c) Changes in the Canadian dollar value of RWA due to foreign exchange translation.
4. The economic value of the Bank, which includes:
   a) Points 1 and 2 above, plus
   b) Changes in the value of other non-trading positions whose value is a function of market risk factors.

**Market risk controls – FVTPL positions**
As an element of the Enterprise Risk Appetite Framework, the Board of Directors approves the overall market risk constraints for RBC. GRM creates and manages the control structure for FVTPL positions that ensures that business is conducted consistent with Board requirements. The Market and Trading Credit Risk function within GRM is responsible for creating and managing the controls and governance procedures

that ensure that risk taken is consistent with risk appetite constraints set by the Board. These controls include limits on probabilistic measures of potential loss such as Value-at-Risk and Stressed Value-at-Risk as defined below:

**Value-at-Risk (VaR) –** is a statistical measure of potential loss for a financial portfolio computed at a given level of confidence and over a defined holding period. We measure VaR at the 99th percentile confidence level for price movements over a one day holding period using historic simulation of the last two years of equally weighted historic market data. These calculations are updated daily with current risk positions with the exception of certain positions which are updated weekly.

**Stressed Value-at-Risk (SVaR) –** is calculated in an identical manner as VaR with the exception that it is computed using a fixed historical one year period of extreme volatility and its inverse rather than the most recent two year history. The stress period used is the interval from September 2008 through August 2009. Stressed VaR is calculated weekly for all portfolios.

These measures are computed on all positions that are FVTPL for financial reporting purposes, with the exception of those in a designated hedging relationship and those in our insurance businesses.

**Market risk measures – FVTPL positions**

**VaR and SVaR**

The following table presents our Market risk VaR and Market risk SVaR figures for 2015 and 2014.

**Market Risk VaR***

**Table 57**

| | 2015 | | | | 2014 | | | |
|---|---|---|---|---|---|---|---|---|
| | | For the year ended October 31 | | | | For the year ended October 31 | | |
| (Millions of Canadian dollars) | As at Oct. 31 | Average | High | Low | As at Oct. 31 | Average | High | Low |
| Equity | $ 20 | $ 12 | $ 31 | $ 6 | $ 9 | $ 10 | $ 17 | $ 4 |
| Foreign exchange | 4 | 4 | 8 | 3 | 3 | 2 | 5 | 1 |
| Commodities | 3 | 3 | 6 | 2 | 2 | 3 | 7 | 2 |
| Interest rate | 26 | 28 | 34 | 23 | 24 | 27 | 36 | 18 |
| Credit specific (1) | 6 | 8 | 9 | 6 | 8 | 9 | 11 | 6 |
| Diversification (2) | (18) | (22) | (34) | (15) | (18) | (21) | (30) | (15) |
| **Market risk VaR** | $ 41 | $ 33 | $ 45 | $ 26 | $ 28 | $ 30 | $ 39 | $ 19 |
| **Market risk Stressed VaR** | $ 109 | $ 104 | $ 157 | $ 73 | $ 83 | $ 92 | $ 121 | $ 69 |

* This table represents an integral part of our audited 2015 Annual Consolidated Financial Statements.

(1) General credit spread risk is measured under interest rate VaR while credit specific risk captures issuer-specific credit spread volatility.

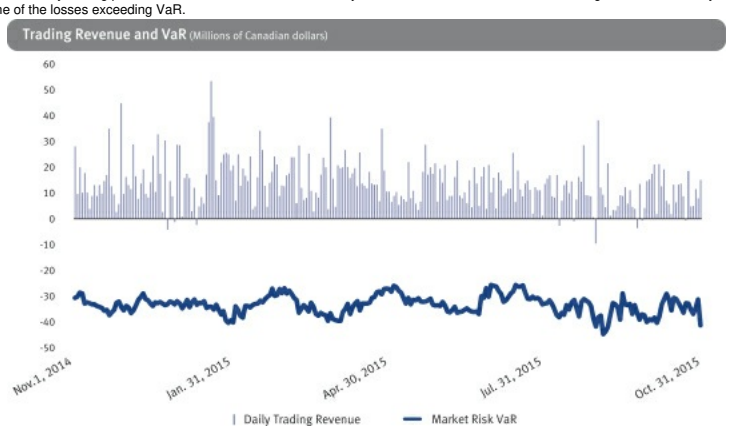
(2) Market risk VaR is less than the sum of the individual risk factor VaR results due to portfolio diversification.

**2015 vs. 2014**

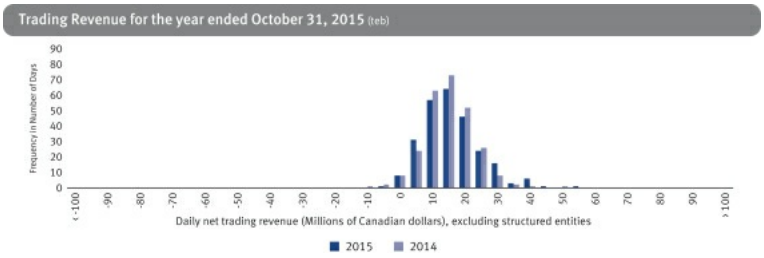
Average market risk VaR of $33 million was up $3 million compared to the prior year, mainly reflecting an increase due to the impact of foreign exchange translation and higher exposure to our credit risk resulting from the implementation of funding valuation adjustments at the end of the fourth quarter of 2014, and by higher equity market volatility.

Average SVaR of $104 million was up $12 million compared to the prior year, largely due to the implementation of funding valuation adjustments as noted above and the impact of foreign exchange translation.

The following chart graphically displays a bar chart of our daily trading profit and loss and a line chart of our daily Market risk VaR. We incurred net trading losses on nine days in the year totalling $25 million, as compared to 11 days of losses totalling $46 million in 2014, with none of the losses exceeding VaR.



The following chart displays the distribution of daily trading profit and loss in 2015. The largest daily reported loss of $9.4 million on September 1, 2015 was primarily driven by market volatility. Of the nine loss days in fiscal 2015, six occurred within Q4. These loss days were driven by market volatility as a result of uncertainty over China's economy and U.S. federal rate increases in the fourth quarter. The largest reported profit was $53.4 million with an average daily profit of $13.6 million.




**Market risk measures for other FVTPL positions – Assets and liabilities of RBC Insurance**

We offer a range of insurance products to clients and hold investments to meet the future obligations to policyholders. The investments which support actuarial liabilities are predominantly fixed income assets designated as at FVTPL. Consequently, changes in the fair values of these assets are recorded in investment income in the consolidated statements of income and are largely offset by changes in the fair value of the actuarial liabilities, the impact of which is reflected in insurance policyholder benefits and claims. As at October 31, 2015, we had liabilities with respect to insurance obligations of $9.1 billion and trading securities of $7.1 billion in support of the liabilities.

**Market risk controls – Structural Interest Rate Risk (SIRR) positions** (1)

The interest rate risk arising from non-trading positions is referred to as SIRR, and is subject to a separate set of limits and controls. Non-trading positions in the bank mostly include the Bank's personal and business lending and deposit activities. Factors contributing to SIRR include the mismatch between future asset and liability repricing dates, relative changes in asset and liability rates, and product features that could affect the expected timing of cash flows, such as options to pre-pay loans or redeem term deposits prior to contractual maturity.

The Board of Directors approves the risk appetite for SIRR, and the Asset Liability Committee (ALCO), along with GRM, provides ongoing oversight of SIRR through risk policies, limits, operating standards and other controls. SIRR reports are reviewed regularly by GRM, ALCO, the Group Risk Committee, the Risk Committee of the Board and the Board of Directors.

Details on the non-trading risks included in SIRR are outlined in Table 59.

**Structural Interest Rate Risk measurement**

To monitor and control SIRR, the Bank assesses two primary financial metrics, 12-month NII (NII risk) and Economic Value of Equity (EVE risk), under a range of market shocks and scenarios. Market scenarios include currency-specific parallel and non-parallel yield curve changes and interest rate volatility shocks.

In measuring NII risk, detailed non-trading balance sheets and income statements are dynamically simulated to determine the impact of market stress scenarios on projected NII. Assets, liabilities and off-balance sheet positions are simulated using monthly time steps over a one-year horizon. The simulations incorporate product maturities, renewals and growth along with prepayment and redemption behaviour. Product pricing and volumes are calibrated from past experience and projected consistent with expectations for a given market stress scenario. EVE risk captures the market value sensitivity of structural positions to changes in longer-term rates. In measuring EVE risk, deterministic (single-scenario) and stochastic (multiple-scenario) valuation techniques are applied to detailed spot position data. NII and EVE risks are measured for a range of market risk stress scenarios which include extreme but plausible market rate changes, across interest rate curves and interest rate volatilities.

The management of NII and EVE risks is complementary and supports efforts by the Bank to generate a sustainable high quality NII stream. NII and EVE risks are measured daily, weekly or monthly depending on the size, complexity and hedge strategy applicable to a balance sheet or business activity.

A number of assumptions affecting cash flows, product re-pricing and the administration of rates underlie the models used to measure NII and EVE risks. The key assumptions pertain to the expected funding profiles for retail mortgage rate commitments, prepayment behaviour for fixed-rate loans, term deposit redemption behaviour, and the treatment of non-maturity deposits. All assumptions are derived empirically from historical client and product experience and consider future product pricing and customer needs. All models and assumptions used to measure SIRR are subject to independent oversight by GRM.

**Market risk measures – Structural Interest Rate Positions**

The following table shows the potential before-tax impact of an immediate and sustained 100 bps and 200 bps increase or decrease in interest rates on projected 12-month NII and EVE for the Bank's non-trading balance sheet, assuming no subsequent hedging. Rate floors are applied within the declining rates scenarios, with floor levels set based on global rate movement experience. Interest rate risk measures are based upon interest rate exposures at a specific time and continuously change as a result of business activities and risk management actions.

(1) SIRR positions include impact of derivatives in hedge accounting relationships and AFS securities used for interest rate risk management.

**Market risk measures – Non-trading banking activities***

**Table 58**

| (Millions of Canadian dollars) | 2015 Economic value of equity risk: Canadian dollar impact | 2015 Economic value of equity risk: U.S. dollar impact (1) | 2015 Economic value of equity risk: Total | 2015 Net interest income risk (2): Canadian dollar impact | 2015 Net interest income risk (2): U.S. dollar impact (1) | 2015 Net interest income risk (2): Total | 2014 Economic value of equity risk | 2014 Net interest income risk (2) | 2013 Economic value of equity risk | 2013 Net interest income risk (2) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Before-tax impact of:** | | | | | | | | | | |
| 100bps increase in rates | **$ (1,069)** | **$ (3)** | **$(1,072)** | **$ 280** | **$ 9** | **$ 289** | $ (916) | $ 414 | $ (540) | $ 391 |
| 100bps decrease in rates | **836** | **(7)** | **829** | **(364)** | **(6)** | **(370)** | 754 | (348) | 446 | (303) |
| **Before-tax impact of:** | | | | | | | | | | |
| 200bps increase in rates | **(2,208)** | **(13)** | **(2,221)** | **451** | **21** | **472** | (1,910) | 763 | (1,160) | 758 |
| 200bps decrease in rates | **929** | **(4)** | **925** | **(372)** | **(7)** | **(379)** | 1,259 | (434) | 799 | (398) |

* This table represents an integral part of our audited 2015 Annual Consolidated Financial Statements.
(1) Represents the impact on the non-trading portfolios held in our U.S. banking operations.
(2) Represents the 12-month Net interest income exposure to an instantaneous and sustained shift in interest rates.

At the end of fiscal 2015, an immediate and sustained -100 bps shock would have had a negative impact to the Bank's NII of $370 million, up from $348 million at the end of 2014. An immediate and sustained +100bps shock at the end of fiscal 2015 would have had a negative impact to the Bank's EVE of $1,072 million, up from $916 million in 2014. The year-over-year increases in NII and EVE risks are primarily attributed to balance sheet growth. A larger fixed-rate asset position contributed to higher EVE risk, but also dampened the increase in NII risk. During fiscal 2015, NII and EVE risks were maintained well within approved limits.

**Market risk measures for other material non-trading portfolios**

**AFS securities**
We held $48 billion of securities classified as AFS as at October 31, 2015, compared to $46 billion as at October 31, 2014. We hold debt securities designated as AFS primarily as investments and to manage liquidity and interest rate risk in our non-trading banking activity. Certain legacy debt portfolios are also classified as AFS. As at October 31, 2015, our portfolio of AFS securities exposes us to interest rate risk of a pre-tax loss of $5.4 million as measured by the change in the value of the securities for a one basis point parallel increase in yields. The portfolio also exposes us to credit spread risk of a pre-tax loss of $14.7 million, as measured by the change in value for a one basis point widening of credit spreads. Changes in the value of these securities are reported in other comprehensive income. The value of the AFS securities included in our Structural Interest Rate Risk measure as at October 31, 2015 was $34.9 billion. Our AFS securities also include equity exposures of $1.8 billion as at October 31, 2015, up from $1.7 billion as at October 31, 2014.

**Derivatives related to non-trading activity**
Derivatives are also used to hedge market risk exposures unrelated to our trading activity. In aggregate, derivative assets not related to trading activity of $6.4 billion as at October 31, 2015 were up from $3.4 billion as at October 31, 2014, and derivative liabilities of $4.5 billion as at October 31, 2015 were up from $1.8 billion as at October 31, 2014.

**Non-trading derivatives in hedge accounting relationships**
The derivative assets and liabilities described above include derivative assets in a designated hedge accounting relationship of $2.8 billion as at October 31, 2015, up from $2.0 billion as at October 31, 2014, and derivative liabilities of $2.0 billion as at October 31, 2015, up from $837 million last year. These derivative assets and liabilities are included in our Structural Interest Rate Risk measure and other internal non-trading market risk measures. We use interest rate swaps to manage our AFS securities and structural interest rate risk, as described above. To the extent these swaps are considered effective hedges, changes in their fair value are recognized in other comprehensive income. The interest rate risk for the designated cash flow hedges, measured as the change in the fair value of the derivatives for a one basis point parallel increase in yields, was $5.5 million as of October 31, 2015.

Interest rate swaps are also used to hedge changes in the fair value of certain fixed-rate instruments. Changes in fair value of the interest rate swaps and the hedged instruments that are related to interest rate movements are reflected in income.

We also use foreign exchange derivatives to manage our exposure to equity investments in subsidiaries that are denominated in foreign currencies, particularly the U.S. dollar and British pound. Changes in the fair value of these hedges and the cumulative translation adjustment related to our structural foreign exchange risk are reported in other comprehensive income.

**Other non-trading derivatives**
Derivatives including interest rate swaps and foreign exchange derivatives that are not in designated hedge accounting relationships are used to manage other non-trading exposures. These derivatives have been designated as fair value through profit and loss with changes in the fair value of these derivatives reflected in income. Derivative assets of $3.6 billion as at October 31, 2015 on these trades were up from $1.4 billion as at October 31, 2014, and derivative liabilities of $2.5 billion as at October 31, 2015 were up from $1.0 billion last year.

**Non-trading foreign exchange rate risk**
Foreign exchange rate risk is the potential adverse impact on earnings and economic value due to changes in foreign currency rates. Our revenue, expenses and income denominated in currencies other than the Canadian dollar are subject to fluctuations as a result of changes in the value of the average Canadian dollar relative to the average value of those currencies. Our most significant exposure is to the U.S. dollar, due to our level of operations in the U.S. and other activities conducted in U.S. dollars. Other significant exposures are to the British pound and the Euro, due to our activities conducted internationally in these currencies. A strengthening or weakening of the Canadian dollar compared to the U.S. dollar, British pound and the Euro could reduce or increase, as applicable, the translated value of our foreign currency denominated revenue, expenses and earnings and could have a significant effect on the results of our operations. We are also exposed to foreign exchange rate risk arising from our investments in foreign operations. For un-hedged equity investments, when the Canadian dollar appreciates against other currencies, the unrealized translation losses on net foreign investments decreases our shareholders' equity through the other components of equity and decreases the translated value of the RWA of the foreign currency-denominated asset. The reverse is true when the Canadian dollar depreciates against other currencies. Consequently, we consider these impacts in selecting an appropriate level of our investments in foreign operations to be hedged.

Our overall trading and non-trading market risk objectives, policies and methodologies have not changed significantly from 2014.

**Linkage of market risk to selected balance sheet items**

The following table provides the linkages between selected balance sheet items with positions included in our trading market risk and non-trading market risk disclosures, which illustrates how we manage market risk for our assets and liabilities through different risk measures.

**Linkage of market risk to selected balance sheet items** — **Table 59**

| | As at October 31, 2015 | | | |
|---|---|---|---|---|
| | | Market risk measure | | |
| (Millions of Canadian dollars) | Balance sheet amount | Traded risk (1) | Non-traded risk (2) | Non-traded risk primary risk sensitivity |
| **Assets subject to market risk** | | | | |
| Cash and due from banks (3) | $ 12,452 | $ 5,720 | $ 6,732 | Interest rate |
| Interest-bearing deposits with banks (4) | 22,690 | 15,764 | 6,926 | Interest rate |
| Securities | | | | |
| Trading (5) | 158,703 | 151,420 | 7,283 | Interest rate, credit spread |
| Available-for-sale (6) | 56,805 | – | 56,805 | Interest rate, credit spread, equity |
| Assets purchased under reverse repurchase agreements and securities borrowed (7) | 174,723 | 174,594 | 129 | Interest rate |
| Loans | | | | |
| Retail (8) | 348,183 | 16,337 | 331,846 | Interest rate |
| Wholesale (9) | 126,069 | 140 | 125,929 | Interest rate |
| Allowance for loan losses | (2,029) | – | (2,029) | Interest rate |
| Segregated fund net assets (10) | 830 | – | 830 | Interest rate |
| Derivatives | 105,626 | 99,233 | 6,393 | Interest rate, foreign exchange |
| Other assets (11) | 64,082 | 24,578 | 39,504 | Interest rate |
| **Assets not subject to market risk** (12) | 6,074 | | | |
| **Total assets** | $ 1,074,208 | $ 487,786 | $ 580,348 | |
| **Liabilities subject to market risk** | | | | |
| Deposits (13) | $ 697,227 | $ 151,776 | $ 545,451 | Interest rate |
| Segregated fund liabilities (14) | 830 | – | 830 | Interest rate |
| Other | | | | |
| Obligations related to securities sold short | 47,658 | 47,658 | – | |
| Obligations related to assets sold under repurchase agreements and securities loaned (15) | 83,288 | 83,165 | 123 | Interest rate |
| Derivatives | 107,860 | 103,348 | 4,512 | Interest rate, foreign exchange |
| Other liabilities (16) | 58,184 | 19,757 | 38,427 | Interest rate |
| Subordinated debentures | 7,362 | – | 7,362 | Interest rate |
| **Liabilities not subject to market risk** (17) | 7,855 | | | |
| **Total liabilities** | $ 1,010,264 | $ 405,704 | $ 596,705 | |
| **Total equity** | $ 63,944 | | | |
| **Total liabilities and equity** | $ 1,074,208 | | | |

(1) Traded risk includes FVTPL positions whose revaluation gains and losses are reported in revenue. Market risk measures of VaR, SVaR and Stress testing are used as risk controls for traded risk.

(2) Non-traded risk includes positions used in the management of the SIRR and other non-trading portfolios. Other material non-trading portfolios include positions from our Insurance business and AFS securities not included in SIRR.

The following footnotes provide additional information on the Non-traded risk amounts:

(3) Cash and due from banks includes $5,829 million included in SIRR. An additional $903 million is included in other risk controls.

(4) Interest-bearing deposits with banks of $6,926 million are included in SIRR.

(5) Trading securities include $7,283 million in securities used in the management of the SIRR of RBC Insurance, which is not included in our disclosed SIRR measure.

(6) Includes available-for-sale securities of $48,164 million and held-to-maturity securities of $8,641 million. $43,528 million of the total securities are included in SIRR. An additional $1,917 million are held by our insurance businesses that do not contribute to our disclosed SIRR measures. The remaining $11,360 million are captured in other internal non-trading market risk reporting.

(7) Assets purchased under reverse repurchase agreements include $129 million reflected in SIRR.

(8) Retail loans include $331,846 million reflected in SIRR.

(9) Wholesale loans include $124,701 million reflected in SIRR. An additional $1,228 million is used in the management of the SIRR of RBC Insurance.

(10) Investments for the account of segregated fund holders are included in the management of the SIRR of RBC Insurance.

(11) Other assets include $36,728 million reflected in SIRR. An additional $2,776 million is used in the management of the SIRR of RBC Insurance.

(12) Assets not subject to market risk include $6,074 million of physical and other assets.

(13) Deposits include $545,451 million reflected in SIRR.

(14) Insurance and investment contracts for the account of segregated fund holders are included in the management of the SIRR of RBC Insurance.

(15) Obligations related to assets sold under repurchase agreements include $123 million reflected in SIRR.

(16) Other liabilities include $28,408 million used in the management of the SIRR of RBC Insurance, and $10,019 million contribute to our SIRR measure.

(17) Liabilities not subject to market risk include $7,855 million of payroll related and other liabilities.

| (Millions of Canadian dollars) | Balance sheet amount | Market risk measure: Traded risk (1) | Market risk measure: Non-traded risk (2) | Non-traded risk primary risk sensitivity |
|---|---|---|---|---|
| | As at October 31, 2014 | | | |
| **Assets subject to market risk** | | | | |
| Cash and due from banks (3) | $ 17,421 | $ 10,840 | $ 6,581 | Interest rate |
| Interest-bearing deposits with banks (4) | 8,399 | 5,642 | 2,757 | Interest rate |
| Securities | | | | |
| Trading (5) | 151,380 | 144,607 | 6,773 | Interest rate, credit spread |
| Available-for-sale (6) | 47,768 | – | 47,768 | Interest rate, credit spread, equity |
| Assets purchased under reverse repurchase agreements and securities borrowed (7) | 135,580 | 135,444 | 136 | Interest rate |
| Loans | | | | |
| Retail (8) | 334,269 | 16,614 | 317,655 | Interest rate |
| Wholesale (9) | 102,954 | 427 | 102,527 | Interest rate |
| Allowance for loan losses | (1,994) | – | (1,994) | Interest rate |
| Segregated fund net assets (10) | 675 | – | 675 | Interest rate |
| Derivatives | 87,402 | 83,981 | 3,421 | Interest rate, foreign exchange |
| Other assets (11) | 49,878 | 14,098 | 35,780 | Interest rate |
| **Assets not subject to market risk** (12) | 6,818 | | | |
| **Total assets** | $ 940,550 | $ 411,653 | $ 522,079 | |
| **Liabilities subject to market risk** | | | | |
| Deposits (13) | $ 614,100 | $ 116,348 | $ 497,752 | Interest rate |
| Segregated fund liabilities (14) | 675 | – | 675 | Interest rate |
| Other | | | | |
| Obligations related to securities sold short | 50,345 | 50,345 | – | |
| Obligations related to assets sold under repurchase agreements and securities loaned (15) | 64,331 | 64,210 | 121 | Interest rate |
| Derivatives | 88,982 | 87,145 | 1,837 | Interest rate, foreign exchange |
| Other liabilities (16) | 51,190 | 14,756 | 36,434 | Interest rate |
| Subordinated debentures | 7,859 | – | 7,859 | Interest rate |
| **Liabilities not subject to market risk** (17) | 8,565 | | | |
| **Total liabilities** | $ 886,047 | $ 332,804 | $ 544,678 | |
| **Total equity** | $ 54,503 | | | |
| **Total liabilities and equity** | $ 940,550 | | | |

(1) Traded risk includes FVTPL positions whose revaluation gains and losses are reported in revenue. Market risk measures of VaR, SVaR and Stress testing are used as risk controls for traded risk.
(2) Non-traded risk includes positions used in the management of the SIRR and other non-trading portfolios. Other material non-trading portfolios include positions from our Insurance business and AFS securities not included in SIRR.

The following footnotes provide additional information on the Non-traded risk amounts:
(3) Cash and due from banks includes $5,494 million included in SIRR. An additional $1,087 million is included in other risk controls.
(4) Interest-bearing deposits with banks of $2,757 million are included in SIRR.
(5) Trading securities include $6,761 million in securities used in the management of the SIRR of RBC Insurance, which is not included in our disclosed SIRR measure.
(6) Available-for-sale securities of $44,403 million are included in SIRR. An additional $3,365 million are held by our insurance businesses that do not contribute to our disclosed SIRR measures and certain legacy assets.
(7) Assets purchased under reverse repurchase agreements include $136 million reflected in SIRR.
(8) Retail loans include $317,655 million reflected in SIRR.
(9) Wholesale loans include $101,364 million reflected in SIRR. An additional $1,163 million is used in the management of the SIRR of RBC Insurance.
(10) Investments for the account of segregated fund holders are included in the management of the SIRR of RBC Insurance.
(11) Other assets include $33.309 million reflected in SIRR. An additional $2,471 million is used in the management of the SIRR of RBC Insurance.
(12) Assets not subject to market risk include $6,818 million of physical and other assets.
(13) Deposits include $497,747 million reflected in SIRR.
(14) Insurance and investment contracts for the account of segregated fund holders are included in the management of the SIRR of RBC Insurance.
(15) Obligations related to assets sold under repurchase agreements include $121 million reflected in SIRR.
(16) Other liabilities include $9,324 million used in the management of the SIRR of RBC Insurance, and $27,110 million contribute to our SIRR measure.
(17) Liabilities not subject to market risk include $8,565 million of payroll related and other liabilities.

## Liquidity and funding risk

Liquidity and funding risk (liquidity risk) is the risk that we may be unable to generate sufficient cash or its equivalents in a timely and cost-effective manner to meet our commitments as they come due. Liquidity risk arises from mismatches in the timing and value of on-balance sheet and off-balance sheet cash flows that result from banking activities.

Our liquidity profile is structured to ensure that we have sufficient liquidity to satisfy our current and prospective commitments in normal business conditions and in stressed liquidity environments. To achieve these goals, we operate under a comprehensive Liquidity Risk Management Framework (LRMF) and employ several liquidity risk mitigation strategies that include:

- An appropriate balance between the level of exposure allowed under our risk appetite and the cost of risk mitigation;
- Broad funding access, including preserving and promoting a reliable base of core client deposits, ongoing access to diversified sources of wholesale funding and demonstrated capacities to monetize specific asset classes;
- A comprehensive enterprise-wide liquidity stress testing program, contingency planning and status monitoring process that is supported by unencumbered marketable securities;
- Timely and granular risk measurement information;
- Transparent liquidity transfer pricing and cost allocation; and,
- A rigorous first and second line of defense governance model.

Our liquidity management policies, practices and processes reinforce these risk mitigation strategies. In managing liquidity risk, we favour a centralized management approach to the extent possible given the various considerations outlined in this section.

Our liquidity risk objectives, policies and methodologies are regularly reviewed and modified to reflect changing market conditions and business mix, to align with local regulatory developments and to position ourselves for the phasing in of Basel III regulatory liquidity standards. We continue to maintain liquidity and funding that is appropriate for the execution of our strategy. Liquidity risk remains well within our risk appetite.

**Regulatory environment**

We continue to monitor and, as appropriate, modify our risk policies, practices and processes to align with regulatory developments and to position ourselves for prospective implementation of regulatory reforms in the jurisdictions we operate. In May 2014, OSFI issued the final version of the "Liquidity Adequacy Requirements (LAR)" guideline. OSFI's LAR guideline converts the Basel Committee on Banking Supervision's (BCBS) liquidity requirements, including the Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR) liquidity metrics together with monitoring tools, into OSFI guidance and formalizes the use of the OSFI-designed Net Cumulative Cash Flow (NCCF) as a supervisory monitoring tool. Consistent with these requirements, we are submitting monthly LCR and NCCF reports and quarterly NSFR results to OSFI as well as Quantitative Impact Study reports on LCR and NSFR for OSFI and BCBS twice a year.

In August 2014, the Government of Canada's Department of Finance released its bail-in consultation paper "Taxpayer Protection and Bank Recapitalization Regime". Bail-in regimes are being implemented in a number of jurisdictions following the 2008 financial crisis in an effort to limit taxpayer exposure to potential losses of a failing institution and ensure the institution's shareholders and creditors remain responsible for bearing such losses. The proposed Canadian regime applies only to domestic systemically important banks (D-SIBs) and focuses on a specific range of liabilities, which excludes deposits. In its April 21, 2015 Federal Budget announcement, the Government of Canada confirmed its intention to move forward with the Taxpayer Protection and Bank Recapitalization Regime, although no firm timeline was provided. For further details, refer to the Legal and regulatory environment risk section.

In October 2014, the BCBS issued the final standard for the NSFR and banks are required to meet the minimum standard by January 1, 2018. The final "Net stable funding ratio disclosure standard" was issued by the BCBS in June 2015 and banks will be required to comply from the date of the first reporting period after January 1, 2018.

**Risk measurement**

Liquidity risk is measured by applying scenario based assumptions against our assets and liabilities and off-balance sheet commitments to derive expected cash flow profiles over varying time horizons. For instance, government bonds can be quickly and reliably monetized to generate cash inflow prior to their contractual maturity, and similarly, relationship demand deposits can be deemed as having little short-term cash outflow although having the contractual right to redeem on demand. Risk methodologies and underlying assumptions such as these are periodically reviewed and validated to ensure alignment with our operating environment, expected economic and market conditions, rating agency preferences, regulatory requirements and accepted practices.

To control liquidity risk within our liquidity risk appetite, we set limits on various metrics reflecting a range of time horizons and severity of stress conditions. Our liquidity risk measurement and control activities are divided into three categories as follows:

*Structural (longer-term) liquidity risk*

We use an internal metric, derived from the cash capital methodology, which focuses on the structural alignment between long-term illiquid assets and longer-term funding sourced from wholesale investors and core relationship deposits. This metric informs our secured and unsecured wholesale term funding strategy.

*Tactical (shorter-term) liquidity risk*

We use net cash flow limits in conjunction with stress testing to contain risk within the risk appetite at branch, subsidiary and currency levels. Net cash flow positions are derived from the application of internally generated risk assumptions and parameters to known and anticipated cash flows for all material unencumbered assets, liabilities and off-balance sheet activities. Encumbered assets are not considered a source of available liquidity. We also control tactical liquidity by adhering to group-wide and unit-specific prescribed regulatory standards, such as LCR.

*Contingency liquidity risk*

Contingency liquidity risk planning assesses the impact of and our intended responses to sudden stressful events. Our Liquidity Contingency Plan, maintained and administered by Corporate Treasury, guides our actions and responses to liquidity crises. This plan establishes a Liquidity Crisis Team, consisting of senior representatives with relevant subject matter expertise from key business segments and Corporate Support. This team contributes to the development of stress tests and funding plans and meets regularly to assess our liquidity status, conduct stress tests and review liquidity contingency preparedness.

Our stress tests, which include elements of scenario and sensitivity analyses, measure our prospective exposure to global, country-specific and RBC-specific events over a period of several weeks. Different levels of severity are considered for each type of crisis with some scenarios reflecting multiple notch downgrades to our credit ratings.

The contingency liquidity risk planning process informs requirements for our earmarked contingent unencumbered liquid asset pools and identifies contingent funding needs (e.g. draws on committed credit and liquidity lines, demands for more collateral and deposit run-off) and sources (e.g. contingent liquid asset sales and incremental wholesale funding capacity) under various stress scenarios. As described in our Liquidity Contingency Plan, in a particularly acute short-term crisis or if a crisis was extended over a prolonged period, actions would be taken to supplement liquidity available from our earmarked contingency liquid asset pools by limiting cash and collateral outflows and by accessing new sources of liquidity and funding; for example, through sales of liquid assets and securitization and, in extraordinary circumstances, sales of core assets. As well, in light of our current credit ratings and well-developed market relationships and access, it is expected that even under extreme but plausible scenarios, we would continue to be able to access wholesale funding markets, albeit possibly at reduced overall capacity, higher costs and for shorter average maturities.

While we also have potential access to various normal course and emergency central bank lending facilities in Canada, the U.S. and Europe, such facilities are not considered a source of funding in our contingency planning for scenarios identified as extreme but plausible.

Our contingent liquid assets consist primarily of a diversified pool of highly rated and liquid marketable securities and include segregated portfolios (in both Canadian and U.S. dollars) of contingency liquidity assets to address potential on- and off-balance sheet liquidity exposures (such as deposit erosion, loan drawdowns and higher collateral demands), that have been sized through models we have developed or by the scenario analyses and stress tests we conduct periodically. These portfolios are subject to minimum asset quality levels and, as appropriate, other strict eligibility guidelines (e.g. maturity, diversification and eligibility for central bank advances) to maximize ready access to cash in emergencies. In addition to our pools of unencumbered contingent liquid assets, liquid securities held for daily management of short-term tactical cash management or other investment or trading activities, would also be available during times of crisis as sources of liquidity, either via outright sale or to obtain secured funding and meet pledging obligations.

**Risk profile**

As at October 31, 2015, relationship-based deposits as internally defined, which are the primary source of funding for retail loans and mortgages, were $422 billion or 51% of our total funding (October 31, 2014 – $394 billion or 54%). Highly liquid assets were funded primarily by short-term wholesale funding that reflects the expected monetization period of these assets. Wholesale funding is comprised of unsecured short-term liabilities of $110 billion and secured (repos and short sales) liabilities of $149 billion, and represented 13% and 18% of total funding as at October 31, 2015, respectively (October 31, 2014 – $74 billion and $126 billion or 10% and 17% of total funding, respectively). Long-term wholesale funding is mostly used to fund less liquid wholesale assets. Additional quantitative information is provided in the Funding section below.

As at October 31, 2015, we held earmarked contingency liquidity assets of $16 billion, of which $10 billion was in U.S. currency and $6 billion was in Canadian currency (October 31, 2014 – $12 billion of which $7 billion was in U.S. currency and $5 billion was in Canadian currency). During the year ended October 31, 2015, we held on average $13 billion, of which $8 billion was in U.S. currency and $5 billion was in Canadian currency (October 31, 2014 – $12 billion of which $7 billion was in U.S. currency and $5 billion was in Canadian currency). We also held a derivatives pledging liquid asset buffer of US$4 billion as at October 31, 2015 to mitigate the volatility of our net pledging requirements for derivatives trading (October 31, 2014 – US$4 billion). This buffer averaged US$4 billion during the year ended October 31, 2015 (October 31, 2014 – US$4 billion). These assets are included in our high-quality liquid asset (HQLA) pool, which is discussed below.

**Liquidity Coverage Ratio**

The Liquidity Coverage Ratio is a Basel III metric that measures the sufficiency of HQLA available to meet liquidity needs over a 30 day period in an acute stress scenario. The BCBS regulatory minimum coverage level for LCR is currently 60%, increasing each year to 100% by January 2019. In May 2014, OSFI released the final LAR guideline and adopted a minimum LCR requirement of 100% for Canadian banks, effective January 1, 2015.

In July 2014, OSFI released the final guideline on *"Public Disclosure Requirements for Domestic Systemically Important Banks on Liquidity Coverage Ratio (LCR)"* , implementing without change the BCBS LCR Disclosure Standards. OSFI required Canadian banks to disclose the LCR beginning in the second quarter of 2015. LCR is disclosed using the standard Basel disclosure template and is calculated using the average of month-end positions during the quarter.

**Liquidity coverage ratio common disclosure template** (1) **Table 60**

| (Millions of Canadian dollars, except percentage amounts) | As at October 31 2015 | | As at July 31 2015 | |
|---|---|---|---|---|
| | **Total unweighted value (average)** | **Total weighted value (average)** | Total unweighted value (average) | Total weighted value (average) |
| **High-quality liquid assets** | | | | |
| Total high-quality liquid assets (HQLA) | | **194,785** | | 176,928 |
| **Cash outflows** | | | | |
| Retail deposits and deposits from small business customers, of which: (2) | **180,831** | **13,856** | 175,522 | 13,368 |
| *Stable deposits* (3) | **60,399** | **1,813** | 59,784 | 1,794 |
| *Less stable deposits* | **120,432** | **12,043** | 115,738 | 11,574 |
| Unsecured wholesale funding, of which: | **217,592** | **97,305** | 212,854 | 94,770 |
| *Operational deposits (all counterparties) and deposits* (4) *in networks of cooperative banks* | **97,255** | **23,342** | 93,469 | 22,417 |
| *Non-operational deposits* | **101,632** | **55,258** | 105,075 | 58,043 |
| *Unsecured debt* | **18,705** | **18,705** | 14,310 | 14,310 |
| Secured wholesale funding | | **26,709** | | 26,428 |
| *Additional requirements, of which:* | **195,694** | **51,288** | 173,249 | 40,123 |
| *Outflows related to derivative exposures and other collateral requirements* | **43,709** | **17,747** | 31,333 | 8,433 |
| *Outflows related to loss of funding on debt products* | **4,893** | **4,893** | 4,828 | 4,828 |
| *Credit and liquidity facilities* | **147,092** | **28,648** | 137,088 | 26,862 |
| Other contractual funding obligations (5) | **28,056** | **28,056** | 29,652 | 29,652 |
| Other contingent funding obligations (6) | **433,181** | **6,224** | 426,680 | 6,325 |
| **Total cash outflows** | | **223,438** | | 210,666 |
| **Cash inflows** | | | | |
| Secured lending (e.g. reverse repos) | **119,274** | **32,982** | 114,680 | 31,963 |
| Inflows from fully performing exposures | **11,709** | **8,013** | 10,138 | 6,824 |
| Other cash inflows | **29,309** | **29,309** | 21,018 | 21,018 |
| **Total cash inflows** | | **70,304** | | 59,805 |
| | | **Total adjusted value** | | Total adjusted value |
| Total HQLA | | **194,785** | | 176,928 |
| Total net cash outflows | | **153,134** | | 150,861 |
| **Liquidity coverage ratio** | | **127%** | | 117% |

(1) LCR is calculated using OSFI LAR and BCBS liquidity coverage ratio requirements.
(2) Excludes deposits with 0% cash outflow rates.
(3) As defined by BCBS, stable deposits from retail and small business customers are deposits that are insured and are either held in transactional accounts or the bank has an established relationship with the client making the withdrawal unlikely.
(4) Operational deposits from non-retail and non-small and medium-sized enterprise customers are deposits which clients need to keep with the bank in order to facilitate their access and ability to use payment and settlement systems primarily for clearing, custody and cash management activities.
(5) Other contractual funding obligations primarily include outflows from unsettled securities trades and outflows from obligations related to securities sold short.
(6) Other contingent funding obligations include outflows related to other off-balance sheet facilities that carry low LCR runoff factors (0% – 5%).

We manage our LCR position within a target range that reflects management's liquidity risk tolerance and takes into account business mix, asset composition and funding capabilities. The range is subject to periodic review in light of changes to internal requirements and external developments.

We maintain HQLAs in major currencies with dependable market depth and breadth. Our treasury management practices ensure that the levels of HQLA are actively managed, including contingency and cash management liquid assets, to meet our target LCR objectives. Our Level 1 assets, as calculated according to OSFI LAR and the BCBS LCR requirements, represent 78% of total HQLA. These assets consist of cash, placements with central banks and highly rated securities issued or guaranteed by governments, central banks and supra-national entities.

LCR captures cash flows from on- and off-balance sheet activities that are either expected or could potentially occur within 30 days in an acute stress scenario. Cash outflows result from application of withdrawal and non-renewal factors to demand and term deposits which are differentiated by client type (wholesale, retail and small- and medium-sized enterprises). Cash outflows also arise from business activities that create contingent funding and collateral requirements, such as repo funding, derivatives, short sales of securities and the extension of credit and liquidity commitments to client. Cash inflows arise primarily from maturing secured loans, interbank loans and non-HQLA securities.

LCR does not reflect any market funding capacity that management believes would be available to the Bank in a stress situation. All maturing wholesale debt is assigned 100% outflow in the LCR calculation.

**Q4 2015 vs. Q3 2015**
LCR of 127% increased from 117% in the prior quarter, primarily due to higher HQLA, and growth in client deposits and wholesale term funding.

**Liquidity reserve and asset encumbrance**
As recommended by the Enhanced Disclosure Task Force (EDTF), the following tables provide summaries of our liquidity reserve and asset encumbrance. In both tables, unencumbered assets represent, for the most part, a ready source of funding that can be accessed quickly, when required. For the purpose of constructing the following tables, encumbered assets include: (i) bank-owned liquid assets that are either pledged as collateral (e.g. repo financing and derivative pledging) or not freely available due to regulatory or internal policy requirements (e.g. earmarked to satisfy mandatory reserve or local capital adequacy requirements and to maintain continuous access to payment and settlement systems);

(ii) securities received as collateral from securities financing and derivative transactions which have either been re-hypothecated where permissible (e.g. to obtain financing through repos or to cover securities sold short) or have no liquidity value since re-hypothecation is prohibited; and (iii) illiquid assets that have been securitized and sold into the market or that have been pledged as collateral in support of structured term funding vehicles. We do not include encumbered assets as a source of available liquidity in measuring liquidity risk. Unencumbered assets are the difference between total and encumbered assets from both on- and off-balance sheet sources.

**Liquidity reserve**

In the liquidity reserve table, available liquid assets consist of on-balance sheet cash and securities holdings as well as securities received as collateral from securities financing (reverse repos and off-balance sheet collateral swaps) and derivative transactions and constitute the preferred source for quickly accessing liquidity. The other component of our liquidity reserve consists primarily of uncommitted and undrawn central bank credit facilities that could be accessed under exceptional circumstances provided certain pre-conditions could be met and where advances could be supported by eligible assets (e.g. certain unencumbered loans) not included in the liquid assets category.

**Liquidity reserve** (1) **Table 61**

| (Millions of Canadian dollars) | As at October 31, 2015 Bank-owned liquid assets | Securities received as collateral from securities financing and derivative transactions | Total liquid assets | Encumbered liquid assets | Unencumbered liquid assets |
|---|---|---|---|---|---|
| Cash and holding at central banks | **$ 25,075** | **$ –** | **$ 25,075** | **$ 1,719** | **$ 23,356** |
| Deposits in other banks available overnight | **2,298** | **–** | **2,298** | **1** | **2,297** |
| Securities issued or guaranteed by sovereigns, central banks or multilateral development banks (2), (3) | **257,338** | **21,216** | **278,554** | **127,702** | **150,852** |
| Other (2) | **142,713** | **31,751** | **174,464** | **80,349** | **94,115** |
| Liquidity assets eligible at central banks (not included above) (4) | **63** | **–** | **63** | **–** | **63** |
| Undrawn credit lines granted by central banks (5) | **11,844** | **–** | **11,844** | **–** | **11,844** |
| Other assets eligible as collateral for discount (6) | **128,401** | **–** | **128,401** | **–** | **128,401** |
| Other liquid assets (7) | **21,675** | **–** | **21,675** | **21,675** | **–** |
| **Total liquid assets** | **$589,407** | **$ 52,967** | **$642,374** | **$ 231,446** | **$ 410,928** |

| (Millions of Canadian dollars) | As at October 31, 2014 Bank-owned liquid assets | Securities received as collateral from securities financing and derivative transactions | Total liquid assets | Encumbered liquid assets | Unencumbered liquid assets |
|---|---|---|---|---|---|
| Cash and holding at central banks | $ 18,656 | $ – | $ 18,656 | $ 1,054 | $ 17,602 |
| Deposits in other banks available overnight | 3,855 | – | 3,855 | 333 | 3,522 |
| Securities issued or guaranteed by sovereigns, central banks or multilateral development banks (2), (3) | 204,409 | 16,626 | 221,035 | 104,335 | 116,700 |
| Other (2) | 112,878 | 21,346 | 134,224 | 59,345 | 74,879 |
| Liquidity assets eligible at central banks (not included above) (4) | 62 | – | 62 | – | 62 |
| Undrawn credit lines granted by central banks (5) | 8,372 | – | 8,372 | – | 8,372 |
| Other assets eligible as collateral for discount (6) | 125,627 | – | 125,627 | – | 125,627 |
| Other liquid assets (7) | 11,887 | – | 11,887 | 11,887 | – |
| **Total liquid assets** | $485,746 | $ 37,972 | $523,718 | $ 176,954 | $ 346,764 |

| (Millions of Canadian dollars) | As at October 31 2015 | October 31 2014 |
|---|---|---|
| Royal Bank of Canada | **$ 252,052** | $ 221,007 |
| Foreign branches | **64,684** | 47,570 |
| Subsidiaries | **94,192** | 78,187 |
| **Total unencumbered liquid assets** | **$ 410,928** | $ 346,764 |

(1) Information is provided from an enterprise-wide perspective and amounts shown are based on face value. In managing liquidity risk, we consider legal, regulatory, tax and other constraints that may impede transferability of liquidity among RBC units.
(2) The Bank-owned liquid assets amount includes securities owned outright by the Bank or acquired via on-balance sheet securities finance transactions.
(3) Includes liquid securities issued by provincial governments and U.S. government sponsored entities working under U.S. Federal government's conservatorship (e.g. Federal National Mortgage Association and Federal Home Loan Mortgage Corporation).
(4) Includes Auction Rate Securities.
(5) Includes loans that qualify as eligible collateral for the discount window facility available to us at the Federal Reserve Bank of New York. Amounts are face value and would be subject to collateral margin requirements applied by the Federal Reserve Bank to determine collateral value/borrowing capacity. Access to the discount window borrowing program is conditional on meeting requirements set by the Federal Reserve Bank and borrowings are typically expected to be infrequent and due to uncommon occurrences requiring temporary accommodation.
(6) Represents our unencumbered Canadian dollar non-mortgage loan book (at face value) that could, subject to satisfying conditions precedent to borrowing and application of prescribed collateral margin requirements, be pledged to the Bank of Canada for advances under its Emergency Lending Assistance (ELA) program. ELA and other central bank facilities are not considered sources of available liquidity in our normal liquidity risk profile but could in extraordinary circumstances, where normal market liquidity is seriously impaired, allow us and other banks to monetize assets eligible as central bank collateral to meet requirements and mitigate further market liquidity disruption.
(7) Represents pledges related to OTC and exchange-traded derivative transactions.

**2015 vs. 2014**
Total liquid assets increased $119 billion or 23%, reflecting growth in our balance sheet, mainly due to an increase in reverse repo style transactions and securities lending, as well as the impact of foreign exchange translation due to the weaker Canadian dollar.

**Asset encumbrance**
The Asset encumbrance table provides a comprehensive view of the assets available to the Bank, not just the liquidity reserve, and identifies assets already pledged as well as those available for use as collateral (including unencumbered assets from the Liquidity reserve table) for secured funding purposes. Less liquid assets such as mortgages and credit card receivables can in part be monetized although require more lead time relative to liquid assets. As at October 31, 2015, our assets available as collateral comprised 64% of our total liquid assets.

**Asset encumbrance** (1) **Table 62**

| | As at | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **October 31, 2015** | | | | | October 31, 2014 | | | | |
| | **Encumbered** | | **Unencumbered** | | | Encumbered | | Unencumbered | | |
| (Millions of Canadian dollars) | **Pledged as collateral** | **Other** (2) | **Available as collateral** (3) | **Other** (4) | **Total** (5) | Pledged as collateral | Other (2) | Available as collateral (3) | Other (4) | Total (5) |
| Cash and due from banks | **$ –** | **$ 1,719** | **$ 10,733** | **$ –** | **$ 12,452** | $ 243 | $ 1,054 | $ 15,839 | $ 285 | $ 17,421 |
| Interest-bearing deposits with banks | **1** | **–** | **22,689** | **–** | **22,690** | 90 | – | 8,309 | – | 8,399 |
| Securities | | | | | | | | | | |
| Trading | **66,752** | **–** | **90,551** | **1,400** | **158,703** | 64,467 | – | 85,698 | 1,215 | 151,380 |
| Available-for-sale | **7,800** | **669** | **45,548** | **2,788** | **56,805** | 7,781 | 57 | 37,802 | 2,128 | 47,768 |
| Assets purchased under reverse repurchase agreements and securities borrowed | **148,117** | **–** | **89,929** | **18,398** | **256,444** | 111,056 | – | 68,044 | 8,432 | 187,532 |
| Loans | | | | | | | | | | |
| Retail | | | | | | | | | | |
| Mortgage securities (6) | **35,889** | **–** | **33,921** | **–** | **69,810** | 37,441 | – | 29,042 | – | 66,483 |
| Mortgage loans (6) | **36,422** | **–** | **–** | **127,743** | **164,165** | 26,589 | – | – | 126,185 | 152,774 |
| Non-mortgage loans | **8,314** | **–** | **100,040** | **5,854** | **114,208** | 8,915 | – | 97,223 | 8,874 | 115,012 |
| Wholesale | **3,376** | **–** | **40,867** | **81,826** | **126,069** | – | – | 36,777 | 66,177 | 102,954 |
| Allowance for loan losses | **–** | **–** | **–** | **(2,029)** | **(2,029)** | – | – | – | (1,994) | (1,994) |
| Segregated fund net assets | **–** | **–** | **–** | **830** | **830** | – | – | – | 675 | 675 |
| Other – Derivatives | **–** | **–** | **–** | **105,626** | **105,626** | – | – | – | 87,402 | 87,402 |
| – Others (7) | **22,286** | **–** | **–** | **47,870** | **70,156** | 11,887 | – | – | 44,809 | 56,696 |
| **Total assets** | **$ 328,957** | **$ 2,388** | **$ 434,278** | **$390,306** | **$1,155,929** | $ 268,469 | $ 1,111 | $ 378,734 | $344,188 | $992,502 |

(1) Information is provided from an enterprise-wide perspective and amounts shown are based on face value. In managing liquidity risk, we consider legal, regulatory, tax and other constraints that may impede transferability of liquidity among RBC units.
(2) Includes assets restricted from use to generate secured funding due to legal or other constraints.
(3) Includes loans that could be used to collateralize central bank advances. Our unencumbered Canadian dollar non-mortgage loan book (at face value) could, subject to satisfying conditions precedent to borrowing and application of prescribed collateral margin requirements, be pledged to the Bank of Canada for advances under its ELA program. We also lodge loans that qualify as eligible collateral for the discount window facility available to us at the Federal Reserve Bank of New York. ELA and other central bank facilities are not considered sources of available liquidity in our normal liquidity risk profile but could in extraordinary circumstances, where normal market liquidity is seriously disrupted, allow us and other banks to monetize assets eligible as central bank collateral to meet requirements and mitigate market liquidity dislocations.
(4) Other unencumbered assets are not subject to any restrictions on their use to secure funding or as collateral but would not be considered readily available since they may not be acceptable at central banks or for other lending programs.
(5) Includes bank-owned liquid assets and securities received as collateral from off-balance sheet securities financing and derivative transactions.
(6) Amounts have been revised from those previously disclosed.
(7) The Pledged as collateral amounts relate to OTC and exchange traded derivative transactions.

Other sources of liquidity that could be available to mitigate stressed conditions include: (i) our unused wholesale funding capacity, which is regularly assessed using an established methodology that is periodically reviewed and, as necessary, revised, and (ii) central bank borrowing facilities if, in extraordinary circumstances, market sources were not sufficient to allow us to monetize our assets available as collateral to meet our requirements (e.g. Bank of Canada, Federal Reserve Bank, Bank of England, and Bank of France).

**Risk control**

The Board of Directors annually approves the delegation of liquidity risk authorities to senior management. The Risk Committee of the Board annually approves the LRMF and the Pledging Policy and is responsible for their oversight. The Board of Directors, the Risk Committee, GRC and ALCO review, on a regular basis, reporting on our enterprise-wide liquidity position and status. The GRC, the Policy Review Committee (PRC) and/or ALCO also review liquidity documents prepared for the Board of Directors or its committees.

The PRC under GRM annually approves the Liquidity Risk Policy (LRP), which establishes minimum risk control elements in accordance with the Board-approved risk appetite and LRMF.

The ALCO annually approves the Liquidity Contingency Plan and provides strategic direction and oversight to Corporate Treasury, other functions, and business segments on the management of liquidity.

The LRMF and LRP are supported by operational, desk and product-level policies that implement risk control elements, such as parameters, methodologies, management limits and authorities that govern the measurement and management of liquidity. Stress testing is also employed to assess the robustness of the control framework and inform liquidity contingency plans.

**Funding**

*Funding strategy*

Core funding, comprising capital, longer-term wholesale liabilities and a diversified pool of personal and, to a lesser extent, commercial and institutional deposits, is the foundation of our structural liquidity position.

*Deposit profile*

During 2015, we continued to focus on building our core deposit base. Our relationship-based deposits, including our personal deposit franchise and our commercial and institutional client groups, maintain balances with relatively low volatility profiles and constitute our principal source of reliable funding. Reflecting deposit insurance and at times, exclusive relationships with us, these balances represent a highly stable source of core deposits in most circumstances as they are typically less reactive to market developments than those from transactional lenders and investors. Core deposits consist of our own statistically derived liquidity adjusted estimates of the highly stable portions of our relationship-based balances (demand, notice and fixed-term) together with wholesale funds maturing beyond one year and as at October 31, 2015 represented 64% of our total deposits (2014 – 69%). Over the past year, core deposit balances grew by approximately $28 billion or 7%. This increase was mainly attributable to growth in relationship-based personal and business and commercial deposits of $21 billion, of which $9 billion is due to changes in foreign exchange rates, and to a lesser degree by issuance of longer-term wholesale funding. For further details on the gross dollar amounts of our relationship-based deposits and our wholesale funding maturity schedule, refer to the Risk profile section and the following Composition of wholesale funding table, respectively.

*Long-term debt issuance*

During 2015, we continued to experience more favourable unsecured wholesale funding access and pricing compared to many of our global peers. As demonstrated in the following table, we also continued to expand our unsecured long-term funding base by selectively issuing, either directly or through our subsidiaries, $29 billion of term funding in various currencies and markets. Total unsecured long-term funding outstanding increased by $20 billion.

We primarily use residential mortgage and credit card securitization programs as alternative sources of funding and for liquidity and asset/liability management purposes. Our total secured long-term funding includes outstanding mortgage-backed securities (MBS) sold, covered bonds that are collateralized with residential mortgages, and securities backed by credit card and auto receivables.

Compared to 2014, our outstanding MBS sold decreased $642 million. Our covered bonds and securitized credit card receivables increased $10.7 billion and $556 million, respectively, while auto receivables decreased $408 million. Notes backed by auto receivables were fully repaid as at October 31, 2015.

For further details, refer to the Off-balance sheet arrangements section.

**Long-term funding sources***

**Table 63**

| | As at | |
|---|---|---|
| (Millions of Canadian dollars) | **October 31 2015** | October 31 2014 |
| Unsecured long-term funding | **$ 102,081** | $ 82,033 |
| Secured long-term funding | **68,228** | 57,996 |
| Commercial mortgage-backed securities sold | **1,080** | 1,330 |
| Subordinated debentures | **7,227** | 7,832 |
| | **$ 178,616** | $ 149,191 |

* This table represents an integral part of our 2015 Annual Consolidated Financial Statements.

Our wholesale funding activities are well-diversified by geography, investor segment, instrument, currency, structure and maturity. We maintain an ongoing presence in different funding markets, which allows us to continuously monitor market developments and trends, identify opportunities and risks, and take appropriate and timely actions. We operate longer-term debt issuance registered programs. The following table summarizes these programs with their authorized limits by geography.

**Programs by geography** **Table 64**

| Canada | U.S. | Europe/Asia |
|---|---|---|
| • Canadian Shelf – $15 billion | • SEC Registered Medium Term Note Program – US$40 billion<br>• SEC Registered Covered Bond Program – US$15 billion (1) | • European Debt Issuance Program– US$40 billion<br>• Global Covered Bond Program– €32 billion<br>• Japanese Issuance Programs – ¥1 trillion |

(1) Subject to the €32 billion Global Covered Bond Program limit.

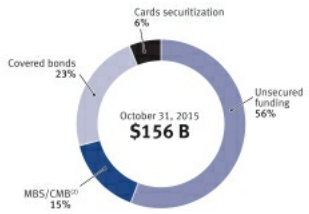
We also raise long-term funding using Canadian Deposit Notes, Canadian NHA MBS, Canada Mortgage Bonds, credit card receivable-backed securities, Kangaroo Bonds (issued in the Australian domestic market by foreign firms) and Yankee Certificates of Deposit (issued in the U.S. domestic market by foreign firms). We continuously evaluate expansion into new markets and untapped investor segments against relative issuance costs since diversification expands our wholesale funding flexibility and minimizes funding concentration and dependency, and generally reduces financing costs. As presented in the following charts, our current long-term debt profile is well diversified by currency as well as by type of long-term funding products. Maintaining competitive credit ratings is also critical to cost-effective funding.

Long-term debt(1) – funding mix by currency of issuance




(1) Based on original term to maturity greater than 1 year.

Long-term debt(1) – funding mix by product




(1) Based on original term to maturity greater than 1 year.
(2) Mortgage-backed securities and Canada Mortgage Bonds.

The following table provides our composition of wholesale funding based on remaining term to maturity and represents our enhanced disclosure in response to EDTF recommendations.

**Composition of wholesale funding** (1) **Table 65**

| (Millions of Canadian dollars) | Less than 1 month | 1 to 3 months | 3 to 6 months | 6 to 12 months | Less than 1 year sub-total | 1 year to 2 years | 2 years and greater | Total |
|---|---|---|---|---|---|---|---|---|
| | As at October 31, 2015 | | | | | | | |
| Deposits from banks (2) | $ 5,107 | $ 62 | $ 13 | $ 30 | $ 5,212 | $ – | $ – | $ 5,212 |
| Certificates of deposit and commercial paper | 9,355 | 9,648 | 18,591 | 10,071 | 47,665 | 451 | 207 | 48,323 |
| Asset-backed commercial paper (3) | 883 | 2,317 | 6,989 | 1,572 | 11,761 | – | – | 11,761 |
| Senior unsecured medium-term notes (4) | 944 | 6,403 | 4,165 | 11,348 | 22,860 | 17,670 | 42,520 | 83,050 |
| Senior unsecured structured notes (5) | 151 | 535 | 376 | 577 | 1,639 | 679 | 6,070 | 8,388 |
| Mortgage securitization | 41 | 1,088 | 673 | 2,139 | 3,941 | 2,656 | 16,049 | 22,646 |
| Covered bonds/asset-backed securities (6) | – | 1,490 | 509 | 4,799 | 6,798 | 5,999 | 28,707 | 41,504 |
| Subordinated liabilities | 1,500 | – | – | – | 1,500 | 108 | 5,619 | 7,227 |
| Other (7) | 4,126 | 3,283 | 252 | 1,318 | 8,979 | 12 | 4,408 | 13,399 |
| **Total** | $ 22,107 | $ 24,826 | $ 31,568 | $ 31,854 | $ 110,355 | $ 27,575 | $ 103,580 | $ 241,510 |
| Of which: | | | | | | | | |
| – Secured | $ 4,952 | $ 7,035 | $ 8,171 | $ 8,510 | $ 28,668 | $ 8,655 | $ 44,756 | $ 82,079 |
| – Unsecured | 17,155 | 17,791 | 23,397 | 23,344 | 81,687 | 18,920 | 58,824 | 159,431 |

| (Millions of Canadian dollars) | Less than 1 month | 1 to 3 months | 3 to 6 months | 6 to 12 months | Less than 1 year sub-total | 1 year to 2 years | 2 years and greater | Total |
|---|---|---|---|---|---|---|---|---|
| | As at October 31, 2014 | | | | | | | |
| Deposits from banks (2) | $ 3,034 | $ 277 | $ 11 | $ 19 | $ 3,341 | $ – | $ – | $ 3,341 |
| Certificates of deposit and commercial paper | 859 | 4,411 | 10,880 | 12,873 | 29,023 | 2,746 | – | 31,769 |
| Asset-backed commercial paper (3) | 518 | 1,320 | 1,835 | 4,114 | 7,787 | – | – | 7,787 |
| Senior unsecured medium-term notes (4) | 592 | 4,573 | 3,341 | 3,970 | 12,476 | 16,809 | 38,254 | 67,539 |
| Senior unsecured structured notes (5) | 336 | 578 | 458 | 1,058 | 2,430 | 597 | 4,729 | 7,756 |
| Mortgage securitization | 58 | 699 | 950 | 1,435 | 3,142 | 3,751 | 16,395 | 23,288 |
| Covered bonds/asset-backed securities (6) | 761 | 22 | 2,391 | 2,635 | 5,809 | 6,934 | 20,246 | 32,989 |
| Subordinated liabilities | 200 | – | – | 1,500 | 1,700 | 1,500 | 4,632 | 7,832 |
| Other (7) | 3,203 | 51 | 596 | 1,111 | 4,961 | 42 | 3,963 | 8,966 |
| Total | $ 9,561 | $ 11,931 | $ 20,462 | $ 28,715 | $ 70,669 | $ 32,379 | $ 88,219 | $ 191,267 |
| Of which: | | | | | | | | |
| – Secured | $ 4,455 | $ 2,041 | $ 5,176 | $ 8,184 | $ 19,856 | $ 10,685 | $ 36,641 | $ 67,182 |
| – Unsecured | 5,106 | 9,890 | 15,286 | 20,531 | 50,813 | 21,694 | 51,578 | 124,085 |

(1) Excludes bankers' acceptances.
(2) Only includes deposits raised by treasury. Excludes deposits associated with services we provide to these banks (e.g. custody, cash management).
(3) Only includes consolidated liabilities, including our collateralized commercial paper program.
(4) Includes deposit notes.
(5) Includes notes where the payout is tied to movements in foreign exchange, commodities and equities.
(6) Includes credit card, auto and mortgage loans.
(7) Includes tender option bonds (secured) of $6,088 million (October 31, 2014 – $3,118 million), bearer deposit notes (unsecured) of $3,186 million (October 31, 2014 – $2,215 million) and other long-term structured deposits (unsecured) of $4,125 million (October 31, 2014 – $3,633 million).

**2015 vs. 2014**
Wholesale funding increased $50.2 billion or 26%. During the year, we issued certificates of deposit and commercial paper, unsecured medium-term notes, and covered bonds in various currencies and markets. The impact of foreign exchange translation as a result of the weaker Canadian dollar also contributed to the increase in wholesale funding.

**Contractual maturities of financial assets, financial liabilities and off-balance sheet items**

The following tables provide remaining contractual maturity profiles of all our assets, liabilities, and off-balance sheet items at their carrying value (e.g. amortized cost or fair value) at the balance sheet date and have been enhanced in response to EDTF recommendations. Off-balance sheet items are allocated based on the expiry date of the contract.

Details of contractual maturities and commitments to extend funds are a source of information for the management of liquidity risk. Among other purposes, these details form a basis for modelling a behavioural balance sheet with effective maturities to calculate liquidity risk measures. For further details, refer to the Risk measurement section.

**Contractual maturities of financial assets, financial liabilities and off-balance sheet items** — Table 66

| | As at October 31, 2015 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| (Millions of Canadian dollars) | Less than 1 month | 1 to 3 months | 3 to 6 months | 6 to 9 months | 9 to 12 months | 1 year to 2 years | 2 years to 5 years | 5 years and greater | With no specific maturity | Total |
| **Assets** | | | | | | | | | | |
| Cash and deposits with banks | $ 31,355 | $ 56 | $ 17 | $ 530 | $ – | $ – | $ – | $ – | $ 3,184 | $ 35,142 |
| Securities | | | | | | | | | | |
| Trading (1) | 103,718 | 21 | 26 | 77 | 51 | 188 | 552 | 5,580 | 48,490 | 158,703 |
| Available-for-sale | 2,947 | 3,682 | 1,345 | 3,259 | 988 | 4,778 | 20,154 | 17,802 | 1,850 | 56,805 |
| Assets purchased under reverse repurchase agreements and securities borrowed | 82,017 | 30,851 | 27,871 | 16,570 | 7,320 | 2,601 | – | – | 7,493 | 174,723 |
| Loans (net of allowance for loan losses) | 15,020 | 11,828 | 23,196 | 22,295 | 18,234 | 89,179 | 184,249 | 22,833 | 85,389 | 472,223 |
| Other | | | | | | | | | | |
| Customers' liability under acceptances | 10,343 | 3,032 | 71 | – | – | 6 | 1 | – | – | 13,453 |
| Derivatives | 7,492 | 8,129 | 3,747 | 3,074 | 2,479 | 10,639 | 25,244 | 44,811 | 11 | 105,626 |
| Other financial assets | 29,187 | 624 | 711 | 169 | 33 | 83 | 26 | 525 | 966 | 32,324 |
| Total financial assets | $ 282,079 | $ 58,223 | $ 56,984 | $ 45,974 | $ 29,105 | $ 107,474 | $ 230,226 | $ 91,551 | $ 147,383 | $ 1,048,999 |
| Other non-financial assets | 1,792 | 1,506 | 526 | 374 | 60 | 866 | 1,573 | 2,425 | 16,087 | 25,209 |
| **Total assets** | $ 283,871 | $ 59,729 | $ 57,510 | $ 46,348 | $ 29,165 | $ 108,340 | $ 231,799 | $ 93,976 | $ 163,470 | $ 1,074,208 |
| **Liabilities and equity** | | | | | | | | | | |
| Deposits (2) | | | | | | | | | | |
| Unsecured borrowing | $ 40,992 | $ 29,994 | $ 41,298 | $ 20,175 | $ 27,220 | $ 30,697 | $ 53,403 | $ 14,479 | $ 338,378 | $ 596,636 |
| Secured borrowing | 970 | 4,818 | 8,602 | 7,567 | 2,676 | 9,708 | 19,318 | 9,736 | – | 63,395 |
| Covered bonds | – | 1,961 | – | 2,293 | 1,165 | 3,269 | 24,064 | 4,444 | – | 37,196 |
| Other | | | | | | | | | | |
| Acceptances | 10,343 | 3,032 | 71 | – | – | 6 | 1 | – | – | 13,453 |
| Obligations related to securities sold short | 47,658 | – | – | – | – | – | – | – | – | 47,658 |
| Obligations related to assets sold under repurchase agreements and securities loaned | 66,099 | 7,580 | 1,419 | 422 | 800 | 780 | 10 | – | 6,178 | 83,288 |
| Derivatives | 5,376 | 8,481 | 4,146 | 4,205 | 3,884 | 12,240 | 28,140 | 41,383 | 5 | 107,860 |
| Other financial liabilities | 23,210 | 1,236 | 391 | 120 | 198 | 72 | 239 | 4,188 | 349 | 30,003 |
| Subordinated debentures | – | – | – | – | – | – | – | 7,362 | – | 7,362 |
| Total financial liabilities | $ 194,648 | $ 57,102 | $ 55,927 | $ 34,782 | $ 35,943 | $ 56,772 | $ 125,175 | $ 81,592 | $ 344,910 | $ 986,851 |
| Other non-financial liabilities | 990 | 3,291 | 170 | 142 | 169 | 894 | 2,564 | 8,522 | 6,671 | 23,413 |
| Equity | – | – | – | – | – | – | – | – | 63,944 | 63,944 |
| **Total liabilities and equity** | $ 195,638 | $ 60,393 | $ 56,097 | $ 34,924 | $ 36,112 | $ 57,666 | $ 127,739 | $ 90,114 | $ 415,525 | $ 1,074,208 |
| **Off-balance sheet items** | | | | | | | | | | |
| Financial guarantees | $ 828 | $ 2,798 | $ 1,348 | $ 2,115 | $ 1,552 | $ 2,861 | $ 5,813 | $ 147 | $ 32 | $ 17,494 |
| Lease commitments | 62 | 123 | 180 | 175 | 177 | 602 | 1,293 | 1,808 | – | 4,420 |
| Commitments to extend credit | 3,801 | 6,005 | 9,854 | 10,976 | 8,281 | 32,971 | 127,747 | 14,127 | 3,113 | 216,875 |
| Other credit-related commitments | 623 | 828 | 1,172 | 1,169 | 1,014 | 343 | 834 | 272 | 74,247 | 80,502 |
| Other commitments | 353 | – | – | – | – | – | – | – | – | 353 |
| **Total off-balance sheet items** | $ 5,667 | $ 9,754 | $ 12,554 | $ 14,435 | $ 11,024 | $ 36,777 | $ 135,687 | $ 16,354 | $ 77,392 | $ 319,644 |

(1) Trading debt securities classified as fair value through profit or loss have been included in the less than 1 month category as there is no expectation to hold these assets to their contractual maturity.

(2) A major portion of relationship-based deposits are repayable on demand or at short notice on a contractual basis while, in practice, these customer balances form a core base, as explained in the preceding Deposit profile section, for our operations and liquidity needs.

| (Millions of Canadian dollars) | As at October 31, 2014<br>Less than 1 month | 1 to 3 months | 3 to 6 months | 6 to 9 months | 9 to 12 months | 1 year to 2 years | 2 years to 5 years | 5 years and greater | With no specific maturity | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| **Assets** | | | | | | | | | | |
| Cash and deposits with banks | $ 22,871 | $ 218 | $ – | $ – | $ – | $ – | $ – | $ – | $ 2,731 | $ 25,820 |
| Securities | | | | | | | | | | |
| Trading (1) | 94,025 | 13 | 65 | 55 | 48 | 229 | 558 | 5,236 | 51,151 | 151,380 |
| Available-for-sale | 4,450 | 3,739 | 2,528 | 433 | 1,113 | 3,417 | 18,307 | 11,959 | 1,822 | 47,768 |
| Assets purchased under reverse repurchase agreements and securities borrowed | 54,860 | 24,728 | 28,241 | 8,261 | 10,361 | 2,142 | – | – | 6,987 | 135,580 |
| Loans (net of allowance for loan losses) (2) | 15,445 | 10,483 | 15,242 | 16,794 | 18,975 | 99,098 | 156,873 | 17,767 | 84,552 | 435,229 |
| Other | | | | | | | | | | |
| Customers' liability under acceptances | 8,812 | 2,498 | 88 | 49 | 9 | – | 6 | – | – | 11,462 |
| Derivatives | 4,145 | 7,275 | 3,483 | 2,673 | 1,909 | 8,507 | 21,331 | 38,071 | 8 | 87,402 |
| Other financial assets | 18,729 | 672 | 585 | 169 | 106 | 245 | 281 | 828 | 828 | 22,443 |
| Total financial assets | $ 223,337 | $ 49,626 | $ 50,232 | $ 28,434 | $ 32,521 | $ 113,638 | $ 197,356 | $ 73,861 | $ 148,079 | $ 917,084 |
| Other non-financial assets | 1,847 | 779 | 679 | 409 | 52 | 589 | 1,637 | 2,302 | 15,172 | 23,466 |
| **Total assets** | $ 225,184 | $ 50,405 | $ 50,911 | $ 28,843 | $ 32,573 | $ 114,227 | $ 198,993 | $ 76,163 | $ 163,251 | $ 940,550 |
| **Liabilities and equity** | | | | | | | | | | |
| Deposits (3) | | | | | | | | | | |
| Unsecured borrowing | $ 31,190 | $ 22,626 | $ 27,372 | $ 18,602 | $ 21,581 | $ 39,693 | $ 49,523 | $ 9,727 | $ 310,045 | $ 530,359 |
| Secured borrowing | 561 | 2,715 | 2,950 | 5,331 | 4,786 | 9,753 | 21,099 | 10,135 | – | 57,330 |
| Covered bonds | 748 | – | 2,558 | – | – | 4,908 | 14,556 | 3,641 | – | 26,411 |
| Other | | | | | | | | | | |
| Acceptances | 8,812 | 2,498 | 88 | 49 | 9 | – | 6 | – | – | 11,462 |
| Obligations related to securities sold short | 50,345 | – | – | – | – | – | – | – | – | 50,345 |
| Obligations related to assets sold under repurchase agreements and securities loaned | 58,208 | 1,252 | 1,306 | 1,051 | 574 | – | – | – | 1,940 | 64,331 |
| Derivatives | 3,745 | 6,997 | 3,845 | 3,351 | 2,042 | 10,345 | 22,295 | 36,359 | 3 | 88,982 |
| Other financial liabilities | 18,094 | 1,121 | 492 | 170 | 298 | 309 | 530 | 4,033 | 357 | 25,404 |
| Subordinated debentures | 200 | – | – | – | – | – | – | 7,659 | – | 7,859 |
| Total financial liabilities | $ 171,903 | $ 37,209 | $ 38,611 | $ 28,554 | $ 29,290 | $ 65,008 | $ 108,009 | $ 71,554 | $ 312,345 | $ 862,483 |
| Other non-financial liabilities | 1,454 | 2,970 | 674 | 57 | 78 | 917 | 2,456 | 7,956 | 7,002 | 23,564 |
| Equity | – | – | – | – | – | – | – | – | 54,503 | 54,503 |
| **Total liabilities and equity** | $ 173,357 | $ 40,179 | $ 39,285 | $ 28,611 | $ 29,368 | $ 65,925 | $ 110,465 | $ 79,510 | $ 373,850 | $ 940,550 |
| **Off-balance sheet items** | | | | | | | | | | |
| Financial guarantees (2) | $ 705 | $ 2,638 | $ 2,590 | $ 2,064 | $ 2,151 | $ 1,345 | $ 5,410 | $ 244 | $ 61 | $ 17,208 |
| Lease commitments | 58 | 114 | 167 | 165 | 161 | 634 | 1,220 | 1,291 | – | 3,810 |
| Commitments to extend credit | 1,670 | 6,345 | 7,336 | 6,779 | 8,562 | 19,942 | 107,868 | 11,708 | 2,306 | 172,516 |
| Other credit-related commitments | 503 | 782 | 966 | 1,232 | 1,183 | 315 | 996 | 242 | 62,325 | 68,544 |
| Other commitments | 246 | 450 | 413 | – | – | – | – | – | – | 1,109 |
| **Total off-balance sheet items** | $ 3,182 | $ 10,329 | $ 11,472 | $ 10,240 | $ 12,057 | $ 22,236 | $ 115,494 | $ 13,485 | $ 64,692 | $ 263,187 |

(1) Trading debt securities classified as fair value through profit or loss have been included in the less than 1 month category as there is no expectation to hold these assets to their contractual maturity.
(2) Amounts have been revised from those previously presented.
(3) A major portion of relationship-based deposits are repayable on demand or at short notice on a contractual basis while, in practice, these customer balances form a core base, as explained in the preceding Deposit profile section, for our operations and liquidity needs.

**Contractual maturities of financial liabilities and off-balance sheet items – undiscounted basis**

The following tables provide remaining contractual maturity analysis of our financial liabilities and off-balance sheet items. The amounts disclosed in the following table are the contractual undiscounted cash flows of all financial liabilities (e.g. par value or amount payable upon maturity). The amounts do not reconcile directly with those in our consolidated balance sheets as the table only incorporates cash flows relating to payments on maturity of the instrument and do not recognize premiums, discounts or mark-to-market adjustments recognized in the instruments' carrying value as at the balance sheet date. Financial liabilities are based upon the earliest period in which they are required to be paid. For off-balance sheet items, the undiscounted cash flows potentially payable under financial guarantees and commitments to extend credit are classified on the basis of the earliest date they can be called.

**Contractual maturities of financial liabilities and off-balance sheet items – undiscounted basis *** **Table 67**

| (Millions of Canadian dollars) | On demand | Within 1 year | 1 year to 2 years | 2 years to 5 years | 5 years and greater | Total |
|---|---|---|---|---|---|---|
| | As at October 31, 2015 | | | | | |
| **Financial liabilities** | | | | | | |
| Deposits (1) | **$ 311,743** | **$ 216,876** | **$ 43,631** | **$ 96,104** | **$ 28,539** | **$ 696,893** |
| Other | | | | | | |
| Acceptances | **–** | **13,446** | **6** | **1** | **–** | **13,453** |
| Obligations related to securities sold short | **–** | **47,658** | **–** | **–** | **–** | **47,658** |
| Obligations related to assets sold under repurchase agreements and securities loaned | **6,179** | **76,320** | **780** | **10** | **–** | **83,289** |
| Other liabilities | **334** | **25,174** | **72** | **237** | **4,139** | **29,956** |
| Subordinated debentures | **–** | **–** | **–** | **–** | **7,227** | **7,227** |
| | **318,256** | **379,474** | **44,489** | **96,352** | **39,905** | **878,476** |
| **Off-balance sheet items** | | | | | | |
| Financial guarantees (2) | **7,079** | **10,399** | **11** | **4** | **1** | **17,494** |
| Operating leases | **–** | **717** | **602** | **1,293** | **1,808** | **4,420** |
| Commitments to extend credit (2) | **172,927** | **43,929** | **4** | **2** | **13** | **216,875** |
| | **180,006** | **55,045** | **617** | **1,299** | **1,822** | **238,789** |
| **Total financial liabilities and off-balance sheet items** | **$ 498,262** | **$ 434,519** | **$ 45,106** | **$ 97,651** | **$ 41,727** | **$ 1,117,265** |

| (Millions of Canadian dollars) | On demand | Within 1 year | 1 year to 2 years | 2 years to 5 years | 5 years and greater | Total |
|---|---|---|---|---|---|---|
| | As at October 31, 2014 | | | | | |
| **Financial liabilities** | | | | | | |
| Deposits (1) | $ 289,204 | $ 161,953 | $ 54,385 | $ 84,609 | $ 22,967 | $ 613,118 |
| Other | | | | | | |
| Acceptances | – | 11,456 | – | 6 | – | 11,462 |
| Obligations related to securities sold short | – | 50,345 | – | – | – | 50,345 |
| Obligations related to assets sold under repurchase agreements and securities loaned | 1,941 | 62,391 | – | – | – | 64,332 |
| Other liabilities | 358 | 20,174 | 309 | 530 | 4,013 | 25,384 |
| Subordinated debentures | – | 200 | – | – | 7,632 | 7,832 |
| | 291,503 | 306,519 | 54,694 | 85,145 | 34,612 | 772,473 |
| **Off-balance sheet items** | | | | | | |
| Financial guarantees (2) | 5,883 | 11,206 | 111 | 7 | 1 | 17,208 |
| Operating leases | – | 665 | 634 | 1,220 | 1,291 | 3,810 |
| Commitments to extend credit (2) | 137,696 | 34,819 | 1 | – | – | 172,516 |
| | 143,579 | 46,690 | 746 | 1,227 | 1,292 | 193,534 |
| **Total financial liabilities and off-balance sheet items** | $ 435,082 | $ 353,209 | $ 55,440 | $ 86,372 | $ 35,904 | $ 966,007 |

* This table represents an integral part of our 2015 Annual Consolidated Financial Statements.

(1) A major portion of relationship-based deposits are repayable on demand or at short notice on a contractual basis while, in practice, these customer balances form a core base, as explained in the preceding Deposit profile section, for our operations and liquidity needs.

(2) We believe that it is highly unlikely that all or substantially all of these guarantees and commitments will be drawn or settled within one year, and contracts may expire without being drawn or settled. The management of the liquidity risk associated with potential extensions of funds is outlined in the preceding Risk measurement section.

**Credit ratings**

Our ability to access unsecured funding markets and to engage in certain collateralized business activities on a cost-effective basis are primarily dependent upon maintaining competitive credit ratings. Credit ratings and outlooks provided by rating agencies reflect their views and are based on their methodologies. Ratings are subject to change from time to time, based on a number of factors including, but not limited to, our financial strength, competitive position and liquidity and other factors not completely within our control.

On January 23, 2015, Fitch Ratings affirmed our ratings with a stable outlook along with the ratings of the other five largest Canadian banks.

On May 20, 2015, Dominion Bond Rating Services (DBRS) revised the outlook on our senior and subordinated debt ratings from stable to negative, along with the outlook of the other five largest Canadian banks. The outlook revision is linked to DBRS' view that expected changes in Canadian legislation and regulation imply that the potential for timely systemic support for D-SIBs is declining.

On July 16, 2015, DBRS affirmed our ratings with a negative outlook along with the ratings of the other five largest Canadian banks.

On October 9, 2015, Standard & Poor's affirmed our ratings with a negative outlook.

On November 3, 2015, Moody's affirmed our ratings with a negative outlook along with the ratings of the other five largest Canadian banks.

The following table presents our major credit ratings[1] and outlooks as at December 1, 2015:

**Credit ratings** — **Table 68**

| | As at December 1, 2015 | | |
|---|---|---|---|
| | **Short-term debt** | **Senior long-term debt** | **Outlook** |
| Moody's | **P-1** | **Aa3** | **negative** |
| Standard & Poor's | **A-1+** | **AA-** | **negative** |
| Fitch Ratings | **F1+** | **AA** | **stable** |
| Dominion Bond Rating Services | **R-1(high)** | **AA** | **negative** |

(1) Credit ratings are not recommendations to purchase, sell or hold a financial obligation inasmuch as they do not comment on market price or suitability for a particular investor. Ratings are determined by the rating agencies based on criteria established from time to time by them, and are subject to revision or withdrawal at any time by the rating organization.

*Additional contractual obligations for rating downgrades*

A lowering of our credit rating may have potentially adverse consequences for our funding capacity or access to the capital markets, may also affect our ability, and the cost, to enter into normal course derivative or hedging transactions and may require us to post additional collateral under certain contracts. However, we estimate, based on periodic reviews of ratings triggers embedded in our existing businesses and of our funding capacity sensitivity, that a minor downgrade would not significantly influence our liability composition, funding access, collateral usage and associated costs. The following table presents the additional collateral obligations required at the reporting date in the event of a one-, two- or three-notch downgrade to our credit ratings. These additional collateral obligations are incremental requirements for each successive downgrade and do not represent the cumulative impact of multiple downgrades. The amounts reported change periodically as a result of several factors, including the transfer of trading activity to centrally cleared financial market infrastructures and exchanges, the expiration of transactions with downgrade triggers, the imposition of internal limitations on new agreements to exclude downgrade triggers, as well as normal course mark to market of positions with collateralized counterparties moving from a negative to a positive position. There is no outstanding senior debt issued in the market that contains rating triggers which would lead to early prepayment of principal.

**Additional contractual obligations for rating downgrades** — **Table 69**

| | As at | | | | | |
|---|---|---|---|---|---|---|
| | **October 31 2015** | | | October 31 2014 | | |
| (Millions of Canadian dollars) | **One-notch downgrade** | **Two-notch downgrade** | **Three-notch downgrade** | One-notch downgrade | Two-notch downgrade | Three-notch downgrade |
| Contractual derivatives funding or margin requirements | **$ 760** | **$ 132** | **$ 972** | $ 518 | $ 143 | $ 790 |
| Other contractual funding or margin requirements (1) | **421** | **88** | **–** | 396 | 62 | – |

(1) Includes GICs issued by our municipal markets business out of New York and London.

## Insurance risk

Insurance risk refers to the potential financial loss that may arise where the amount, timing and/or frequency of benefit payments under insurance and reinsurance contracts are different than expected. Insurance risk is distinct from those risks covered by other parts of our risk management framework (e.g. credit, market and operational risk) where those risks are ancillary to, or accompany the risk transfer.

We have implemented an Insurance Risk Framework that provides an overview of our processes and tools for identifying, assessing, managing and reporting on the insurance risks that face the organization. Key insurance-specific processes and tools include: risk appetite, delegated authorities and risk limits, capital management, Own Risk and Solvency Assessment (ORSA), Comprehensive Identification and Assessment of Risk (CIAR) process, stress testing, insurance product and project risk review and approval, insurance product pricing, reinsurance, insurance underwriting, insurance claims management, experience study analysis, actuarial liabilities, and embedded value.

## Operational risk

Operational risk is the risk of loss or harm resulting from inadequate or failed internal processes, people and systems or from external events.

Operational risk is embedded 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, reputational impact, regulatory censure, or failure in the management of other risks such as credit or market risk.

**Three Lines of Defence**

Operational risk follows our established Three Lines of Defence governance model. This model encompasses the organizational roles and responsibilities for a co-ordinated enterprise-wide approach for the management of operational risk. For further details, refer to the Risk management – Enterprise risk management section.

**Operational Risk Framework**

We have put in place an Operational Risk Framework which is founded on the principles of our Enterprise Risk Management Framework and sets out the processes to identify, assess and monitor operational risk. The processes are established through the following core programs:

- Internal events – Internal events are specific instances where operational risk leads to or could have led to an unintended, identifiable impact. The internal events program provides a structured and consistent approach for collecting and analyzing internal event data to facilitate the analysis of the operational risk events affecting RBC.
- External events – External events are operational risk events that affect institutions other than RBC. External event monitoring and analysis is critical to gain awareness of operational risk experience within the industry and to identify emerging industry trends.

- Business Environment and Internal Control Factors (BEICF) Assessments – BEICF Assessments are conducted to improve business decision-making by gaining awareness of the key risks and the strengths and vulnerabilities of internal controls. Key BEICF Assessment processes include: Risk and Control Assessments conducted at both enterprise and business levels; and Change Initiatives and New/Amended Product Assessments conducted to ensure understanding of the risk and reward trade-off for business initiatives (e.g. new products, acquisitions, changes in business processes, implementation of new technology, etc.).
- Scenario analysis – Scenario analysis is a structured and disciplined process for making reasonable assessments of infrequent, yet plausible, severe operational risk events. Understanding how vulnerable RBC is to such "tail risks" identifies mitigating actions and informs the determination of related operational risk thresholds as part of the articulation of operational risk appetite.
- BEICF monitoring – BEICF monitoring is conducted on an ongoing basis through Key Risk Indicators (KRIs) and other assurance/monitoring programs (e.g. Business Unit monitoring, Second line of Defence monitoring, audit results, etc.).

Conclusions from the operational risk programs enable learning based on "what has happened to us, could it happen again elsewhere in RBC and what controls do we need to amend or implement", support the articulation of operational risk appetite and are used to inform the overall level of exposure to operational risk, which defines our operational risk profile. The profile includes significant operational risk exposures, potential new and emerging exposures and trends, and overall conclusions on the control environment and risk outlook. We proactively identify and investigate corporate insurance opportunities to mitigate and reduce potential future impacts of operational risk.

We consider risk/reward decisions in striking the balance between accepting potential losses versus incurring costs of mitigation, the expression of which is in the form of our operational risk appetite. Our operational risk appetite is established at the board level and cascaded throughout each of our business segments.

Management reports have been implemented at various levels of RBC in order to support proactive management of operational risk and transparency of risk exposures. Reports are provided on a regular basis and provide detail on the main drivers of the risk status and trend for each of our business segments and RBC overall. In addition, changes to the operational risk profile that are not aligned to our business strategy or operational risk appetite are identified and discussed.

Our operations expose us to many different risks, which may adversely affect our businesses and financial results. The following list is not exhaustive, as other factors could also adversely affect our results.

*Ability to attract and to retain employees*
Competition for qualified employees is intense within the financial services industry and from non-financial industries looking to recruit. Although our goal is to attract and retain qualified employees, there is no assurance that we will be able to do so.

*Accuracy and completeness of information on clients and counterparties*
When deciding to extend credit or enter into other transactions with clients and counterparties, we may rely on information provided by or on behalf of clients and counterparties, including audited financial statements and other financial information. We may also rely on representations of clients and counterparties as to the completeness and accuracy of that information. Our financial results could be adversely impacted if the financial statements and other financial information relating to clients and counterparties on whom we rely do not comply with GAAP or are materially misleading.

*Development and integration of our distribution networks*
We regularly explore opportunities to expand our distribution networks, either through acquisitions or organically by adding, for example, new bank branches, insurance offices, online savings accounts and ATMs in high-growth, receptive markets. However, if we are not able to develop or integrate these distribution networks effectively, our results of operations and financial condition may be negatively affected.

*Model risk*
The use of models plays an important role in many of our business activities. We use a variety of models for many purposes, including the valuation of financial products, risk measurement and management of different types of risk. Model risk is the risk of error in the design, development, implementation or subsequent use of models. We have established an enterprise-wide Model Risk Management Framework, including principles, policies and procedures, roles and responsibilities to manage model risk. One of the key factors in the framework to mitigate model risk is independent validation.

*Information technology risk*
We use information technology for business operations and the enablement of strategic business goals and objectives. Information technology risk is the risk to our business associated with the use, ownership, operation, involvement, influence and adoption of information technology within the enterprise. It consists of information technology related events (e.g. cybersecurity incidents) 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. To manage our information technology risk, we have established an enterprise-wide Information Technology Risk Management Framework.

*Information management risk*
Information management risk is the risk of loss or harm resulting from the failure to manage information appropriately throughout its lifecycle. Exposure to this risk exists when information is acquired or created, processed, used, shared, accessed, retained or disposed. With respect to personal information, the failure to manage information appropriately can result in the misuse of personal information or privacy breaches. With respect to client information, the inability to process information accurately and on a timely basis can result in service disruptions. With respect to corporate and proprietary information, the mismanagement of information can result in the disclosure of confidential information, the unavailability of information when it is required and the reliance on inaccurate information for decision-making purposes. Such events could lead to legal and regulatory consequences, reputational damage and financial loss.

*Processing and execution risk*
Processing and execution risk is the risk of failure to effectively design, implement and execute a process. Exposure to this risk is global, existing in every RBC location and operation, and in every RBC employee's actions. Examples of processing and execution events range from selecting the wrong interest rates, duplicating wire payment instructions, transposing figures, processing a foreign exchange transaction incorrectly, underinsuring a property and incorrectly investing funds. The potential impacts of such events include financial loss, legal and regulatory consequences and reputational damage. When identified, these situations are assessed, analyzed and mitigating actions are undertaken.

*Social media risk*
The scale and profile of social media has grown to present a number of risks. These risks include brand and reputational damage, information leaks, non-compliance with regulatory requirements and governance risk. To manage the risks associated with social media, we have implemented an enterprise-wide policy as well as business unit policies on the usage of external social media, which sets out the requirements for the business and corporate use of social media and is part of our larger Social Media Governance Framework.

*Third party and outsourcing risk*
Failing to effectively manage our service providers may expose RBC to service disruptions, regulatory action, financial loss, litigation or reputational damage. Third party and outsourcing risk has received increased oversight from regulators and attention from the media. We formalized and standardized our expectations of our suppliers with a principles-based Supplier Code of Conduct to ensure their behaviour aligns with our standards in the following key areas: business integrity, responsible business practices, responsible treatment of individuals, and the environment.

**Operational risk capital**
We currently use the Standardized Approach to calculate operational risk capital requirements and the allocation of capital amongst our business units. We are in the process of attaining accreditation towards the Basel II Advanced Measurement Approach (AMA) as the approved regulatory capital methodology. We have submitted our full AMA Application to the OSFI and, until approval is received, we are performing parallel runs of the capital model. Output from capital modeling will provide further transparency around the materiality of key risks by quantifying the expected losses and unexpected losses.

**Operational risk loss events**
During 2015, we did not experience any material operational risk loss event. For further details on our contingencies, including litigation, refer to Notes 26 and 27 of our 2015 Annual Consolidated Financial Statements.

## Regulatory compliance risk

Regulatory compliance risk is the risk of potential non-conformance with laws, rules, regulations and prescribed practices in any jurisdiction in which we operate. Issues regarding compliance with laws and regulations can arise in a number of areas in a large complex financial institution such as RBC, and are often the result of inadequate or failed internal processes, people or systems.

Laws and regulations are in place to protect the financial and other interests of our clients, investors and the public. As a large-scale global financial institution, we are subject to numerous laws and to extensive and evolving regulation by governmental agencies, supervisory authorities and self-regulatory organizations in Canada, the U.S., Europe and other jurisdictions in which we operate. In recent years, such regulation has become increasingly extensive and complex. In addition, the enforcement of regulatory matters has intensified. Recent resolution of such matters involving other global financial institutions have involved the payment of substantial penalties, agreements with respect to future operation of their business, actions with respect to relevant personnel and guilty pleas with respect to criminal charges.

Operating in this increasingly complex regulatory environment and intense regulatory enforcement environment, we are and have been subject to a variety of legal proceedings, including civil claims and lawsuits, criminal charges, regulatory examinations, investigations, audits and requests for information by various governmental regulatory agencies and law enforcement authorities in various jurisdictions, and we anticipate that our ongoing business activities will give rise to such matters in the future. Changes to laws, including tax laws, regulations or regulatory policies, as well as the changes in how they are interpreted, implemented or enforced, could adversely affect us, for example, by lowering barriers to entry in the businesses in which we operate, increasing our costs of compliance or limiting our activities and ability to execute our strategic plans. Further, there is no assurance that we always will be or will be deemed to be in compliance with laws, regulations or regulatory policies. Accordingly, it is possible that we could receive a judicial or regulatory judgment or decision that results in fines, damages, penalties, and other costs or injunctions, criminal convictions or loss of licences or registrations that would damage our reputation and negatively impact our earnings. In addition, we are subject to litigation arising in the ordinary course of our business and the adverse resolution of any litigation could have a significant adverse effect on our results or could give rise to significant reputational damage, which in turn could impact our future business prospects.

Global compliance has developed a Regulatory Compliance Management Framework consistent with regulatory expectations from OSFI and other regulators. The framework is designed to manage and mitigate the regulatory compliance risks associated with failing to comply with, or adapt to, current and changing laws and regulations in the jurisdictions in which we operate.

Regulatory compliance risk has been further defined as risks associated with financial crime (which includes, but is not limited to, money laundering, bribery and sanctions), privacy, market conduct, consumer protection, business conduct and prudential requirements. Specific compliance policies, procedures and supporting frameworks have been developed to support the minimum requirements for the prudent management of regulatory compliance risk. Within the framework there are five elements that form a cycle by which all regulatory compliance risk management programs are developed, implemented and maintained.

- The first element is intended to ensure our regulatory compliance programs evolve alongside our business activities and operations.
- The second element is intended to ensure regulatory compliance risks are identified and assessed appropriately so regulatory compliance programs are designed in a manner to most effectively meet regulatory requirements.
- The third element relates to the design and implementation of specific controls.
- The fourth element is intended to ensure appropriate monitoring and oversight of the effectiveness of the controls.
- Lastly, the fifth element is intended to ensure the timely escalation and resolution of issues, and clear and transparent reporting. This is a critical step in enabling senior management and the Board of Directors to effectively perform their management and oversight responsibilities.

## Strategic risk

Strategic risk is the risk that the enterprise or particular business areas will make inappropriate strategic choices, or will be unable to successfully implement selected strategies or related plans and decisions. Business strategy is the major driver of our risk profile and consequently the strategic choices we make in terms of business mix determine how our risk profile changes.

Responsibility for selecting and successfully implementing business strategies is mandated to the individual heads of the businesses. Oversight of strategic risk is the responsibility of the heads of the business segments and their operating committees, the Enterprise Strategy Office, Group Executive, and the Board of Directors. The Enterprise Strategy group supports the management of strategic risk through the strategic planning process (articulated within our Enterprise Strategic Planning Policy) ensuring alignment across our business, financial, capital and risk planning.

For details on the key strategic priorities for our business segments, refer to the Business segment results section.

## Reputation risk

Reputation risk is the risk that an activity undertaken by an organization or its representatives will impair its image in the community or lower public confidence in it, resulting in the loss of business, legal action or increased regulatory oversight.

Reputation risk can arise from a number of events and primarily occurs in connection with credit risk, regulatory, legal and operational risks and failure to maintain strong risk conduct. Operational failures and non-compliance with laws and regulations can have a significant reputational impact on us.

We have put in place a Reputation Risk Framework which provides an overview of our approach to the management of this risk. It focuses on our organizational responsibilities, and controls in place to mitigate reputation risks.

The following principles guide our management of reputation risk:

- We must operate with integrity at all times in order to sustain a strong and positive reputation.
- Protecting our reputation is the responsibility of all our employees, including senior management, and extends to all members of the Board of Directors.

## Legal and regulatory environment risk

Certain regulatory reforms will impact the way in which we operate, both in Canada and abroad, and the full impact of some of these reforms on our business will not be known until final rules are implemented and market practices have developed in response. We continue to respond to these and other developments and are working to minimize any potential adverse business or economic impact. The following regulatory reforms have potential to increase our operational, compliance, and technology costs and adversely affect our profitability.

**Basel Committee on Banking Supervision global standards for capital and liquidity**

The Basel Committee's standards for capital and liquidity (commonly referred to as "Basel III") establish minimum requirements for common equity, increased capital requirements for counterparty credit exposures, a new global leverage ratio and measures to promote the build-up of capital that can be drawn down in periods of stress. Banks around the world continue to adopt the new standards in accordance with domestic implementation.

In January 2013, the BCBS released final rules for the short-term liquidity standard, the LCR, with implementation commencing in 2015. Subsequently in October 2014, the BCBS released final rules for the long-term liquidity standard, the NSFR, with implementation commencing in 2018. For further details on how our business may be impacted, refer to the Liquidity and funding risk section.

In January 2014, the BCBS released final rules for the global leverage requirement, which takes effect as a 3% minimum supplemental capital requirement on January 1, 2018. For further details on how our business may be impacted, refer to the Capital management section.

In September 2014, U.S. regulators approved final rules to apply a U.S.-based supplemental leverage requirement and LCR requirement to large banking organizations operating in the U.S. The Fed has indicated that future rulemakings likely will establish single counterparty credit limits, early remediation requirements, and an LCR for U.S. Intermediate Holding Companies (IHCs) as well as Foreign Banking Organization branches and agencies. IHCs may be subject in whole or in part to additional rules regarding capital, liquidity, and other enhanced standards, including the NSFR.

Basel III requirements have been implemented in the European Union (EU) through a revised Capital Requirements Directive (CRD IV) and accompanying Capital Requirements Regulation (CRR), both of which became effective January 1, 2014 and are to be phased-in gradually through 2019. CRD IV/CRR also introduces improvements to the transparency of activities of banks and investment funds in different countries, adds a host of governance standards (including standards for executive compensation and bonuses, board oversight of risk and board diversity), and implements a common reporting framework for regulatory reporting. These changes have not had a significant impact on capital requirements for our European subsidiaries. The LCR has now been implemented in the EU, while the reporting phase of the Basel III leverage ratio is due to begin on January 1, 2016.

**Dodd-Frank – Enhanced Supervision of Foreign Banking Organizations**

On February 18, 2014, the U.S. Federal Reserve (Fed) finalized a new oversight regime for non-U.S. banks with subsidiaries, affiliates and branches operating in the U.S. ( *Enhanced Prudential Standards for Bank Holding Companies and Foreign Banking Organizations*), intended to address the perceived systemic risk that large foreign banks could pose to U.S. financial markets.

As a Foreign Banking Organization with more than US$50 billion in U.S. non-branch assets, RBC is required to establish a separately capitalized U.S. IHC, into which all of our U.S. legal entities must be placed and for which certain U.S.-based requirements will apply. The IHC will be subject to Fed oversight comparable to U.S. bank holding companies. As a result, changes to our existing practices will be required to provide the governance and infrastructure needed to support these U.S.-specific requirements in areas of financial reporting, capital and liquidity, risk management, and stress testing. In addition, there will be limitations on capital distributions from the IHC to RBC, and such distributions will be subject to supervisory approval. The requirements will be phased-in between 2015 and 2018, with RBC needing to form its IHC by July 1, 2016. An implementation plan outlining our approach for meeting these requirements including forming the IHC was filed with the Fed initially on December 22, 2014. A modified implementation plan was subsequently filed on April 30, 2015 to reflect the planned integration of City National into the IHC. The Fed has stated that it plans to issue, at a later date, separate rules to apply early remediation requirements, and limits on exposures to single counterparties to the IHC. The final rule also deferred application of U.S.-based liquidity and leverage requirements. On October 7, 2015, the Fed approved our request for one-year extensions for the IHC to comply with the Fed's capital plan and stress test requirements. Specifically, the IHC will now be required to comply with the Fed's capital plan requirement beginning January 1, 2017, and with the Fed's stress test requirement beginning January 1, 2018. This extension was granted in consideration of the Fed's October 7, 2015 approval of our acquisition of City National. The Fed agreed with our view that the extension will allow for a more complete integration of City National into our capital plan and stress test development efforts, and that the extension is unlikely to present an undue risk to financial stability. RBC has incurred, and will continue to incur, costs to comply with these additional U.S.-based financial reporting, risk management and governance requirements and we may have less flexibility in our capital and liquidity planning which historically has been managed on a global basis. These impacts are not expected to materially affect our overall results.

**Canadian bail-in regime**
Bail-in regimes are being implemented in a number of jurisdictions following the 2008 financial crisis in an effort to limit taxpayer exposure to potential losses of a failing institution and ensure the institution's shareholders and creditors remain responsible for bearing such losses. The former Federal government under the Conservative party had proposed a "bail-in" regime for the six D-SIBs which would have granted the Federal government the power to permanently cancel a D-SIB's existing common shares and/or convert their long-term senior debt into common shares once the institution was no longer viable. Higher Loss Absorbency requirements would have also applied to ensure affected banks maintained sufficient capital to absorb the proposed conversions. It is unclear at this time whether the recently elected Liberal government will reinstate the Conservative government's proposal and what impact any proposed changes might have on our cost of funding.

**Total loss-absorbing capacity (TLAC)**
On November 9, 2015, the Financial Stability Board (FSB) finalized minimum common international standards related to the total loss-absorbing capacity (TLAC) of global systemically important banks (G-SIBs). The standards are intended to address the sufficiency of G-SIBs' capital to absorb losses in a resolution situation in a manner that minimizes impact on financial stability and ensures continuity of critical and long-term debt functions. Under the final standards, G-SIBs would be expected to meet a 16% Risk Weighted Asset (RWA) requirement by 2019, increasing to 18% by 2022. In addition, G-SIBs would be expected by 2019 to maintain a TLAC leverage ratio exposure of 6% of the Basel III leverage ratio denominator, increasing to 6.75% by 2022. RBC would become subject to these enhanced requirements if we are designated as a G-SIB by the FSB in the future. To date, neither RBC nor any other Canadian bank has been designated as a G-SIB. It is also uncertain how these standards will be integrated into any bail-in regime that could potentially be introduced in Canada.

On October 30, 2015, the Fed proposed rules establishing TLAC, long-term debt, and "clean holding company" requirements for U.S. G-SIBs and the IHCs of non-U.S. G-SIBs. RBC is not covered at this time by the proposal, but our U.S. IHC would become subject to these U.S. requirements should we be designated as a G-SIB in the future.

**Over-the-counter derivatives reform**
Reforms to over-the-counter (OTC) derivatives markets continue on a global basis, with the governments of the G20 nations proceeding with plans to transform the capital regimes, national regulatory frameworks and infrastructures in which we and other market participants operate. We, along with other Canadian banks, are experiencing changes in our wholesale banking business, some of which impacts our client- and trading-related derivatives revenue in Capital Markets. Certain of the rules that impact RBC include:

On January 30, 2015 OSFI issued revised Guideline B-7 Derivatives Sound Practices, translating the G20 reforms into its expectations for Federally Regulated Financial Institutions (FRFIs), including Canadian banks.

In March 2015, the BCBS and the International Organization of Securities Commissions (IOSCO) established minimum standards for margin requirements for non-centrally cleared derivatives requiring non-exempt financial entities and systemically important non-financial entities to exchange initial and variation margin on bilateral OTC derivatives. Throughout 2014 and 2015, regulators around the globe proposed domestic rules based on these guidelines. The BCBS/IOSCO framework will be phased-in from September 1, 2016. RBC expects it will be required to comply from this date and will work with national authorities to prepare for compliance.

To avoid the imposition of duplicative prudential and other regulatory requirements and mitigate some of the related compliance and operating costs, the U.S. Commodity Futures Trading Commission (CFTC) has issued guidance that permits RBC and other Canadian banks who registered as swaps dealers in the U.S. to substitute compliance with a limited subset of CFTC swap dealers rules by complying with Canadian rules in several areas. We continue to work with Canadian and U.S. authorities to encourage further reliance on the Canadian framework in this regard. Pending the issuance of expanded CFTC substituted compliance determinations, we, along with other Canadian swap dealers continue to engage with the CFTC to ensure the continued availability of no-action relief in connection with certain U.S. rules that are beyond the scope of the existing substituted compliance determinations and guidance.

In Europe, OTC reforms are being implemented through the European Market Infrastructure Regulation (EMIR) and the review of Markets in Financial Instruments Directive and accompanying Regulation (together, MiFID II/MiFIR). EMIR requires firms to clear certain OTC standardized derivative contracts through central counterparties, establish risk mitigation controls for non-cleared OTC derivatives transactions, and report both cleared and non-cleared contracts to trade repositories. MiFID II/MiFIR is expected to take effect in January 2017 and will introduce an on-venue trading obligation, subject to a determination of sufficient liquidity by the European Securities and Markets Authority (ESMA), for certain OTC derivatives that ESMA has deemed to be subject to the clearing obligation under EMIR.

**Consumer protection**
On September 19, 2014, the Supreme Court of Canada rendered its judgment in the 2003 Quebec class action lawsuit, *Marcotte v. Bank of Montreal*. The Court found that certain provisions of Quebec's *Consumer Protection Act* apply to credit cards issued by federally-chartered banks. The extent to which provincial/territorial regulation of other banking activities will be upheld is yet to be determined.

**Common reporting standard**
In April 2013, in an effort to combat international tax evasion, the G20 countries committed to introduce a global standard for the automatic exchange of financial information. In July 2014, the Organisation for Economic Co-operation and Development published the Standard for Automatic Exchange of Financial Account Information in Tax Matters, which consists of a Model Competent Authority Agreement to be used by governments to enter into agreements with jurisdictions with which they will automatically exchange financial account information (Reportable Jurisdictions), and a Common Reporting Standard (CRS) that provides standard procedures to be followed by financial institutions globally to identify reportable accounts. Information related to such accounts will be submitted by financial institutions to their local governments on an annual basis, who will then automatically exchange that information with the appropriate Reportable Jurisdictions.

As of November 1, 2015, over 90 countries have committed to introduce the requirements of CRS into local law, effective in either 2016 or 2017, with the first exchanges of information to begin in the year following implementation. The majority of jurisdictions in which RBC operates have committed to implement CRS, with a notable exception being the U.S.

RBC businesses operating in CRS jurisdictions will be required to make changes to existing business processes in order to comply with CRS due diligence requirements related to the identification and reporting of reportable accounts. In addition to changes to new account opening procedures, a review of pre-existing accounts in accordance with defined procedures will also be required and may require contacting certain pre-existing clients to request additional information and/or documentation. We will also incur additional costs in order to comply with these due diligence requirements.

**U.K. and European regulatory reform**

Effective March 2016, certain RBC U.K. subsidiaries and branches will become subject to enhanced requirements under the Senior Managers and Certification Regime, including prescribed responsibilities, a statutory duty on senior managers to take reasonable steps to prevent regulatory breaches in their areas of responsibility, and new remuneration rules for senior managers. A certification regime will apply to employees performing 'significant harm' roles. Additionally, new conduct rules will apply to all in-scope employees from March 2017.

In July 2015, a revised Deposit Guarantee Scheme Directive (DGSD) took effect. DGSD strengthens depositor protection across the EU through harmonization of the amount protected ( €100,000/GBP 75,000) and related disclosure requirements. In the U.K., further obligations relating to Single Customer View reporting and continuous access to funds will come into effect in late 2016. The requirements impact our deposit-taking businesses in Europe by requiring changes to current reporting and disclosure requirements, as well as revisions to current procedures and processes.

MiFID II/MiFIR will have a significant impact across all RBC businesses operating in the EU given the wide-ranging nature of the reforms, which will introduce changes with respect to pre- and post-trade transparency; market structure; trade and transaction reporting; algorithmic and high frequency trading; and conduct of business. Final technical standards are expected in early 2016. The complexity of MiFID II/MiFIR implementation for RBC businesses operating in the EU will be increased by the need to address obligations arising under other overlapping regulatory initiatives. This will include the reporting obligations to be implemented under the recast Transparency Directive (effective November 2015) and Securities Financing Transaction Regulation (expected to come into force in 2016); the EMIR clearing obligation (to be phased-in over the course of 2016); and the Market Abuse Regulation (effective July 2016), which is intended to increase market integrity and investor protection across the EU.

## Competitive risk

The competition for clients among financial services companies in the markets in which we operate is intense. Client loyalty and retention can be influenced by a number of factors, including new technology used or services offered by our competitors, relative service levels, relative prices, product and service attributes, our reputation, actions taken by our competitors, and adherence with competition and anti-trust laws. Other companies, such as insurance companies and non-financial companies, are increasingly offering services traditionally provided by banks. For example, our payments business is facing intense competition from emerging non-traditional competitors. This competition could also reduce net interest income, fee revenue and adversely affect our results.

## Systemic risk

Systemic risk is the risk that the financial system as a whole, or a major part of it – either in an individual country, a region, or globally – is put in real and immediate danger of collapse or serious damage with the likelihood of material damage to the real economy, and that this will result in financial, reputation or other risks for RBC.

Systemic risk is considered to be the least controllable risk facing RBC. Our ability to mitigate this risk when undertaking business activities is limited, other than through collaborative mechanisms between key industry participants, and, as appropriate, the public sector, to reduce the frequency and impact of these risks. The two most significant measures in mitigating the impact of systemic risk are diversification and stress testing.

Our diversified business portfolios, products, activities and funding sources help mitigate the potential impacts from systemic risk. We also mitigate systemic risk by establishing risk limits to ensure our portfolio is well diversified, and concentration risk is reduced and remains within our Risk Appetite.

Stress testing involves consideration of the simultaneous movements in a number of risk factors. It is used to ensure our business strategies and capital planning are robust by measuring the potential impacts of credit, market, liquidity and funding and operational risks on us, under adverse economic conditions. Our enterprise-wide stress testing program uses stress scenarios featuring a range of severities based on plausible adverse economic and financial market events. These stress scenarios are evaluated across the organization, and results are integrated to develop an enterprise-wide view of the impacts on our financial results and capital requirements. For further details on our stress testing, refer to the Risk management – Enterprise risk management section.

## Overview of other risks

In addition to the risks described in the Risk management section, there are other risk factors, described below, which may adversely affect our businesses and financial results. The following discussion is not exhaustive as other factors could also adversely affect our results.

**Business and economic conditions**

Our earnings are significantly affected by the general business and economic conditions in the geographic regions in which we operate. These conditions include consumer saving and spending habits as well as consumer borrowing and repayment patterns, business investment, government spending, exchange rates, sovereign debt risks, the level of activity and volatility of the capital markets, strength of the economy and inflation. For example, an extended economic downturn may result in high unemployment and lower family income, corporate earnings, business investment and consumer spending, and could adversely affect the demand for our loan and other products and result in higher provisions for credit losses. Given the importance of our Canadian operations, an economic downturn in Canada or in the U.S. impacting Canada would largely affect our personal and business lending activities in our Canadian banking businesses, including cards, and could significantly impact our results of operations.

Our earnings are also sensitive to changes in interest rates. A continuing low interest rate environment in Canada, the U.S. and globally would result in net interest income being unfavourably impacted by spread compression largely in Personal & Commercial Banking and Wealth Management. While an increase in interest rates would benefit our businesses that are currently impacted by spread compression, a significant increase in interest rates could also adversely impact household balance sheets. This could result in credit deterioration which might negatively impact our financial results, particularly in some of our personal and commercial banking and Wealth Management businesses.

Capital Markets and Investor & Treasury Services would be negatively impacted if global capital markets deteriorate resulting in lower average fee-based client assets and transaction volumes and trading volatility. In Wealth Management, weaker market conditions would lead to lower average fee-based client assets and transaction volumes. Worsening of financial and credit market conditions may adversely affect our

ability to access capital markets on favourable terms and could negatively affect our liquidity, resulting in increased funding costs and lower transaction volumes in Capital Markets and Investor & Treasury Services. For further details on economic and market factors which may impact our financial performance, refer to the Wealth Management, Investor & Treasury Services and Capital Markets sections.

**Government fiscal, monetary and other policies**

Our businesses and earnings are affected by the fiscal, monetary or other policies that are adopted by the Bank of Canada and various other Canadian regulatory authorities, the Board of Governors of the Federal Reserve System in the U.S. and other U.S. government authorities, as well as those adopted by international regulatory authorities and agencies in jurisdictions in which we operate. Such policies can also adversely affect our clients and counterparties in Canada, the U.S. and internationally, which may increase the risk of default by such clients and counterparties.

**Tax risk and transparency**

Tax risk refers to the risk of loss related to unexpected tax liabilities. The tax laws and systems that are applicable to RBC are complex and wide ranging. As a result, we ensure that any decisions or actions related to tax always reflect our assessment of the long-term costs and risks involved, including their impact on our relationship with clients, shareholders, and regulators, and our reputation.

Our approach to tax is governed by our Taxation Policy and Risk Management Framework, and reflects the fundamentals of our Risk Pyramid. Oversight of our tax policy and the management of tax risk is the responsibility of the CAO & CFO and the Senior Vice President, Taxation. We report our tax position to the Audit Committee on a regular basis and discuss our tax strategy with the Audit and Risk Committees as well as with GE.

Our tax strategy is designed to ensure transparency and support our business strategy, and is aligned with our corporate vision and values. We seek to maximize shareholder value by ensuring that our businesses are structured in a tax-efficient manner while considering reputational risk by being in compliance with all laws and regulations. Our framework seeks to ensure that we:

- Act with integrity and in a straightforward, open and honest manner in all tax matters;
- Ensure tax strategy is aligned with our business strategy supporting only bona fide transactions with a business purpose and economic substance;
- Ensure our full compliance and full disclosure to tax authorities of our statutory obligations; and
- Endeavour to work with the tax authorities to build positive long-term relationships and where disputes occur, address them constructively.

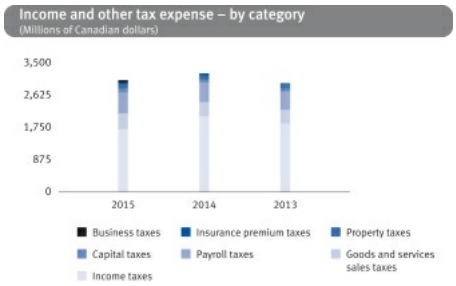
With respect to assessing the needs of our clients, we consider a number of factors including the purposes of the transaction. We seek to ensure that we only support bona fide client transactions with a business purpose and economic substance. Should we become aware of client transactions that are aimed at evading their tax obligations, we will not proceed with the transaction.

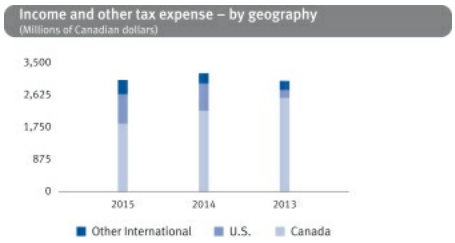
RBC operates in 39 countries worldwide. Our activities in these countries are subject to both Canadian and international tax legislation and other regulation, and are fully disclosed to the relevant tax authorities. The Taxation group and GRM both regularly review the activities of all entities to ensure compliance with tax requirements and other regulations.

Given that we operate globally, complex tax legislation and accounting principles can result in differing legal interpretations between the respective tax authorities we deal with and ourselves, and we are at risk of tax authorities disagreeing with prior positions we have taken for tax purposes. Should this occur, we are committed to an open and transparent dialogue with the tax authorities to ensure a quick assessment and prompt resolution of the issues. Failure to adequately manage tax risk and resolve issues with tax authorities in a satisfactory manner could adversely impact our results, potentially to a material extent in a particular period, and/or significantly impact our reputation.

*Tax Contribution*

In 2015, total income and other tax expense to various levels of governments globally totalled $3.1 billion (2014 – $3.2 billion; 2013 – $3 billion). In Canada, total income and other tax expense for the year ended October 31, 2015 to various levels of government totalled $1.9 billion (2014 – $2.2 billion; 2013 – $2.6 billion).




For further details on income and other tax expense, refer to the Financial performance section.

**Environmental risk**
Environmental risk is the risk of loss to financial, operational or reputational value resulting from the impact of environmental issues. It arises from the business activities and operations of both us and our clients. For example, the environmental issues associated with our clients' purchase and sale of contaminated property or development of large-scale projects may give rise to credit, regulatory and reputation risk. Operational and legal risks may arise from environmental issues at our branches, offices or data processing centres.

Corporate Sustainability (CS) sets enterprise-wide policy requirements for the identification, assessment, control, monitoring and reporting of environmental risk. Oversight is provided by GE and the Governance Committee of the Board of Directors. Business segments and corporate functions are responsible for incorporating environmental risk management requirements and controls within their operations. The CS Group also provides advisory services and support to business segments on the management of specific environmental risks in business transactions.

Periodically, we verify that our environmental risk management policies and processes are operating as intended. On an annual basis, and more frequently as required, environmental risk management activities, issues and trends are reported to GE and to the Governance Committee of the Board of Directors. Failure to adequately manage environmental risk could adversely impact our results and/or significantly impact our reputation.

We report on the full extent of environmental management annually in the Corporate Responsibility Report and Public Accountability Statements.

**Other factors**
Other factors that may affect actual results include changes in government trade policy, changes in accounting standards, including their effect on our accounting policies, estimates and judgments, currency and interest rate movements in Canada, the U.S., and other jurisdictions in which we operate, changes to our credit ratings, the timely and successful development of new products and services, our ability to cross-sell more products to customers, technological changes, effective design, implementation and execution of processes and their associated controls, fraud by internal and external parties, the possible impact on our business from disease or illness that affects local, national or global economies, disruptions to public infrastructure, including transportation, communication, power and water, international conflicts and other political developments including those relating to the war on terrorism, and our success in anticipating and managing the associated risks.

We caution that the foregoing discussion of risk factors, many of which are beyond our control, is not exhaustive and other factors could also affect our results.

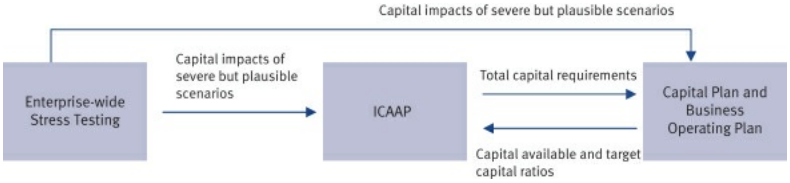
## Capital management

We actively manage our capital to maintain strong capital ratios and high ratings while providing strong returns to our shareholders. In addition to the regulatory requirements, we consider the expectations of credit rating agencies, depositors and shareholders, as well as our business plans, stress tests, peer comparisons and our internal capital ratio targets. Our goal is to optimize our capital usage and structure, and provide support for our business segments and clients and better returns for our shareholders, while protecting depositors and senior creditors.

**Capital management framework**
Our capital management framework provides the policies and processes for defining, measuring, raising and investing all types of capital in a co-ordinated and consistent manner. It includes our overall approach to capital management, including guiding principles as well as roles and responsibilities relating to capital adequacy and transactions, dividends, solo capital and management of risk-weighted assets (RWA) and leverage ratio exposures. We manage and monitor capital from several perspectives, including regulatory capital, economic capital and subsidiary capital.

Our capital planning is a dynamic process which involves various teams including Finance, Corporate Treasury, GRM, Economics and our businesses, and covers internal capital ratio targets, potential capital transactions as well as projected dividend payouts and share repurchases. The integral parts of our capital planning are comprised of our business operating plans, enterprise-wide stress testing and Internal Capital Adequacy Assessment Process (ICAAP), along with the considerations of regulatory capital requirements and accounting changes, internal capital requirements, rating agency metrics and solo capital.

Our capital plan is established on an annual basis and is aligned with the management actions included in the annual business operating plan, which includes forecast growth in assets and earnings taking into account our business strategies, projected market and economic environment and peer positioning. This includes incorporating potential capital transactions based on our projected internal capital generation, business forecasts, market conditions and other developments, such as accounting and regulatory changes that may impact capital requirements. All of the components in the capital plan are monitored throughout the year and are revised as deemed appropriate.




Our Enterprise-wide stress testing and ICAAP provide key inputs for capital planning, including setting the appropriate internal capital ratio targets. The stress scenarios are evaluated across the organization, and results are integrated to develop an enterprise-wide view of financial impacts and capital requirements, which in turn facilitate the planning of mitigating actions to absorb exceptional adverse events. ICAAP is an OSFI mandated annual process to assess capital adequacy and requirements to cover all material risks, with a cushion to cover severe but plausible contingencies. In accordance with the OSFI guideline, the major components of our ICAAP process include comprehensive risk assessment, stress testing, capital assessment and planning (both economic and regulatory capital), board and senior management oversight, monitoring and reporting and internal control review.

Our internal capital targets are established to maintain robust capital positions in excess of OSFI's Basel III "all-in" regulatory targets, which include minimum capital requirements plus a capital conservation buffer, and effective January 1, 2016, a D-SIBs surcharge that can absorb losses during periods of stress. The "all-in" methodology includes all regulatory adjustments that will be required by 2019, while retaining the phase-out rules for non-qualifying capital instruments, as per OSFI's Basel III Capital Adequacy Requirements (CAR) guideline. The stress test

results of our Enterprise-wide stress testing and ICAAP are incorporated into the OSFI capital conservation buffer and D-SIBs surcharge, with a view to ensuring the bank has adequate capital to underpin risks and absorb losses under all plausible stress scenarios given our risk profile and appetite. In addition, we include a discretionary cushion on top of the OSFI regulatory targets to maintain capital strength for forthcoming regulatory and accounting changes, peer comparatives, rating agencies sensitivities and solo capital level.

The Board of Directors is responsible for ultimate oversight of capital management, including the annual review and approval of the Capital Plan. ALCO and GE share responsibility for capital management and receive regular reports detailing our compliance with established limits and guidelines. The Risk Committee annually approves the Capital Management Framework. The Audit and Risk Committees jointly approve the ICAAP process. The Audit Committee is also responsible for the ongoing review of internal controls over capital management.

**Basel III**

Our regulatory capital requirements are determined on a Basel III "all-in" basis as per OSFI guidelines. The top corporate entity to which Basel III applies at the consolidated level is Royal Bank of Canada.

Under Basel III, banks select from among alternative approaches to calculate their minimum regulatory capital required to underpin credit, market and operational risks.

We adopted the Basel III IRB approach to calculate credit risk capital for consolidated regulatory reporting purposes. While the majority of our credit risk exposures are reported under the Basel III IRB approach for regulatory capital purposes, certain portfolios considered non-material from a consolidated perspective continue to use the Basel III Standardized approach for credit risk (for example, our Caribbean banking operations). For consolidated regulatory reporting of operational risk capital, we currently use the Standardized approach. We have applied to OSFI for approval for the use of AMA for operational risk capital measurement and will commence reflecting operational risk capital under the AMA approach once approved. For consolidated regulatory reporting of market risk capital, we use both Internal Models-based and Standardized approaches.

In December 2010, the BCBS issued "Basel III: A global regulatory framework for more resilient banks and banking systems", which outlines the capital and liquidity requirements for global banks, with the objective of promoting financial stability and is intended to ensure sustainable economic growth. The BCBS sets out the Basel III transitional requirements for Common Equity Tier 1 (CET1), Tier 1 and Total capital ratios at 4.5%, 6.0% and 8%, respectively for 2015, which will be fully phased-in to 7%, 8.0% and 10.5%, respectively (including minimums plus capital conservation buffer of 2.5%) by January 1, 2019. The BCBS also released the NVCC requirements in January 2011 with an effort to ensure the loss absorbency of regulatory capital instruments at the point of non-viability. In August 2011, OSFI issued an advisory outlining the NVCC principles and requirements, including a full and permanent conversion of non-common capital instruments into common shares upon a trigger event, effective the first quarter of 2013.

OSFI expects Canadian banks to currently meet the Basel III "all-in" targets (BCBS January 1, 2019 requirements – minimum ratios plus the capital conservation buffer) for CET1 ratio, Tier 1 and Total capital. To ensure consistent implementation similar to that in other countries, effective January 1, 2014, OSFI allowed Canadian banks to phase in the Basel III CVA capital charge over a five-year period ending December 31, 2018. In accordance with OSFI guidance, there are two possible options to phase in the CVA capital charge. Under the option selected by RBC in 2015, Option 1, Basel III CVA is reflected in risk-weighted assets based on a scalar of 64%, 71%, and 77% for CET1, Tier 1 and Total Capital, respectively. In 2016, the scalars will remain unchanged, and will reach 100% for each tier of capital by 2019.

Commencing January 1, 2016, RBC will be required to include an additional 1% risk-weighted capital surcharge given our designation as a D-SIB by OSFI in 2013 (along with five other Canadian banks).

In October 2014, OSFI issued its final "Leverage Requirements (LR) Guideline", which replaced the OSFI Assets-to-Capital Multiple (ACM) with the Basel III Leverage ratio, beginning in the first quarter of 2015. The leverage ratio is defined as Tier 1 capital divided by leverage ratio exposure. The leverage ratio exposure is the sum of (a) on-balance sheet exposures; (b) derivative exposures; (c) securities financing transaction exposures and (d) off-balance sheet items. Canadian banks are expected to maintain a leverage ratio that meets or exceeds 3% at all times.

Pursuant to the BCBS publication "Global systemically important banks (G-SIB): updated assessment methodology and the higher loss absorbency requirement", issued in July 2013 and the OSFI advisory "Global systemically important banks (G-SIBs) – Public disclosure requirements", published in March 2014 and revised in September 2015, all federally regulated banks with a Basel III leverage ratio total exposure exceeding €200 billion at their financial year-end are required, at a minimum, to publicly disclose in the first quarter following their year-end, the twelve indicators used in the G-SIB assessment methodology, with the goal of enhancing the transparency of the relative scale of banks' potential global systemic importance and data quality. In the first quarter of 2015, we were not designated as a G-SIB. However, as we met the BCBS size threshold, we disclosed the 12 indicators using the OSFI prescribed template for the financial years ended 2013 and 2014 in our first quarter of 2015 report to shareholders.

In November 2015, the FSB and BCBS published an updated list of G-SIBs. We were not designated as a G-SIB as of November 2015.

In December 2013, BCBS issued the final standard related to the capital requirements for banks' equity investment in funds, with an effective date of January 2017, which aims to provide three approaches to measuring the risk sensitivity of banking book investments in funds. In December 2014, BCBS issued the final standards on the revised securitization framework, which aims to strengthen the capital standards for securitization exposures held in the banking book, with an effective date of January 2018. We are reviewing these two standards and have commenced work to ensure implementation of these standards by the respective effective dates.

In January 2015, BCBS issued the final standard on Pillar 3 which requires disclosure of standard templates to provide comparability and consistency of capital disclosure amongst banks. BCBS requires all banks to provide the revised Pillar 3 disclosures by the end of fiscal 2016. The implementation date for Pillar III for Canadian banks is expected to be no earlier than the fourth quarter of 2017.

The BCBS also issued two consultative papers in December 2014 "Capital floor: the design of a framework based on Standardized approaches" and "Revisions to the Standardized approach for credit risk". The capital floor consultative document focuses on the design of a capital floor framework based on the Standardized approach, with the objective to mitigate model risk and measurement error stemming from internal models and enhance comparability of capital across banks. This framework will replace the current transitional floor, which is based on the Basel I standard. The revisions to the Standardized approach for credit risk document is designed to strengthen the existing regulatory capital framework, with the objective of reducing reliance on external credit ratings, increasing risk sensitivity, and increasing comparability of capital requirements to the IRB approach. These revisions are expected to increase the comparability of capital requirements between banks using the Standardized approach.

We will continue to monitor and assess the capital impact of these regulatory developments.

The following table provides a summary of OSFI regulatory target ratios under Basel III.

**OSFI regulatory target ratios under Basel III** — Table 70

| Basel III Capital ratios and leverage | OSFI regulatory target requirements for large banks under Basel III | | | | | RBC capital and leverage ratios as at October 31, 2015 | Meet or exceed OSFI regulatory target ratios |
|---|---|---|---|---|---|---|---|
| | Minimum | Capital Conservation Buffer | Minimum including Capital Conservation Buffer | D-SIBs Surcharge (1) | Minimum including Capital Conservation Buffer and D-SIBs surcharge (1) | | |
| Common Equity Tier 1 | > 4.5% | 2.5% | > 7.0% | 1.0% | > 8.0% | 10.6% | ü |
| Tier 1 capital | > 6.0% | 2.5% | > 8.5% | 1.0% | > 9.5% | 12.2% | ü |
| Total capital | > 8.0% | 2.5% | > 10.5% | 1.0% | > 11.5% | 14.0% | ü |
| Leverage ratio | > 3.0% | n.a. | > 3.0% | n.a. | > 3.0% | 4.3% | ü |

(1) The D-SIBs surcharge will be applicable to risk-weighted capital commencing January 1, 2016.

**Regulatory capital, RWA and capital ratios**

The following table provides details on our regulatory capital, RWA and capital ratios. Our capital position remained strong during the year and our capital ratios remain well above OSFI regulatory targets.

**Regulatory capital, RWA and capital ratios** — Table 71

| (Millions of Canadian dollars, except percentage and multiple amounts and as otherwise noted) | As at October 31 2015 | As at October 31 2014 |
|---|---|---|
| **Capital** (1) | | |
| CET1 capital | **$ 43,715** | $ 36,406 |
| Tier 1 capital | **50,541** | 42,202 |
| Total capital | **58,004** | 50,020 |
| **RWA used in calculation of capital ratios** (1), (2) | | |
| CET1 capital RWA | **411,756** | 368,594 |
| Tier 1 capital RWA | **412,941** | 369,976 |
| Total capital RWA | **413,957** | 372,050 |
| Total capital RWA consisting of: (1) | | |
| Credit risk | **$ 323,870** | $ 286,327 |
| Market risk | **39,786** | 38,460 |
| Operational risk | **50,301** | 47,263 |
| **Total capital RWA** | **$ 413,957** | $ 372,050 |
| **Capital ratios, Leverage ratio and multiples** (1), (3) | | |
| CET1 ratio | **10.6%** | 9.9% |
| Tier 1 capital ratio | **12.2%** | 11.4% |
| Total capital ratio | **14.0%** | 13.4% |
| Assets-to-capital multiple (4) | **n.a.** | 17.0X |
| Gross-adjusted assets (GAA) (4) (billions) | **n.a.** | $ 885.0 |
| Leverage ratio | **4.3%** | n.a. |
| Leverage ratio exposure (billions) | **$ 1,170.2** | n.a. |

(1) Capital, RWA, capital ratios and multiples are calculated using OSFI Capital Adequacy Requirements based on the Basel III framework. Leverage ratios are calculated using OSFI Leverage Requirements Guideline based on the Basel III framework. Effective the first quarter of 2015, the leverage ratio has replaced the ACM. The leverage ratio is a regulatory measure under the Basel III framework and is not applicable (n.a.) for periods prior to Q1 2015. Capital ratios presented above are on an "all-in" basis.

(2) Effective Q3 2014, different scalars were applied to the CVA included in each of the three tiers of capital. In 2014, the CVA scalars 57%, 65% and 77% were applied to CET 1, Tier 1 and Total Capital, respectively. In fiscal 2015, the CVA scalars were 64%, 71% and 77%, respectively. In fiscal 2016, the scalars will remain unchanged.

(3) To enhance comparability among other global financial institutions, our transitional CET1, Tier 1, Total capital and leverage ratios as at October 31, 2015 were 12.0%, 12.2%, 13.9% and 4.5%, respectively. Transitional is defined as capital calculated according to the current year's phase-in of regulatory adjustments and phase-out of non-qualifying capital instruments.

(4) Assets-to-capital multiples and GAA were calculated on a transitional basis in the prior period.

**Basel III regulatory capital and capital ratios**

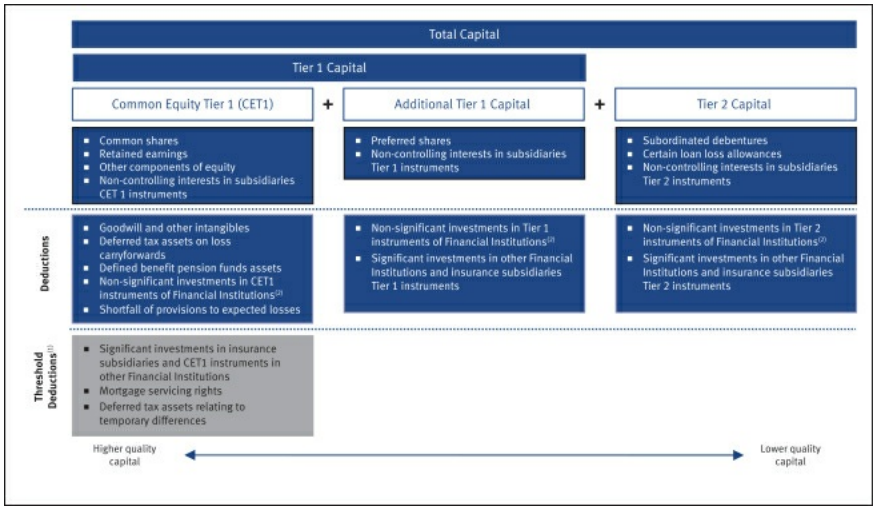
Under Basel III, regulatory capital consists of CET1, Additional Tier 1 and Tier 2 capital.

CET1 capital comprises the highest quality of capital. Regulatory adjustments under Basel III include full deductions of certain items and additional capital components that are subject to threshold deductions.

Tier 1 capital comprises predominantly CET1 and Additional Tier 1 items including non-cumulative preferred shares. Tier 2 capital includes subordinated debentures that meet certain criteria, certain loan loss allowances and non-controlling interests in subsidiaries Tier 2 instruments. Total capital is defined as the sum of Tier 1 and Tier 2 capital. Preferred shares and subordinated debentures issued after January 1, 2013 require NVCC features to be included into regulatory capital. For further details on NVCC, refer to the discussion above.

Regulatory capital ratios are calculated by dividing CET1, Tier 1 and Total capital by their respective RWA.

The following chart provides a summary of the major components of CET1, Additional Tier 1 and Tier 2 capital.



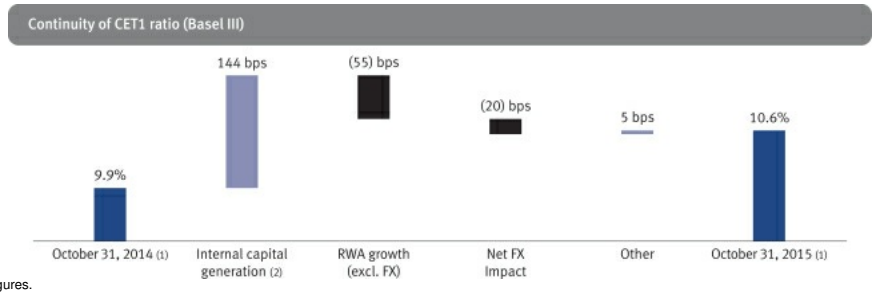

(1) First level: The amount by which each of the items exceeds a 10% threshold of CET1 capital (after all deductions but before threshold deductions) will be deducted from CET1 capital. Second level: The aggregate amount of the three items not deducted from the first level above and in excess of 15% of CET1 capital after regulatory adjustments will be deducted from capital, and the remaining balance not deducted will be risk-weighted at 250%.

(2) Non-significant investments are subject to certain CAR criteria that drive the amount eligible for deduction.

**Regulatory Capital** — **Table 72**

| | All-in basis | |
|---|---|---|
| (Millions of Canadian dollars) | **2015** | 2014 |
| **CET1 capital: instruments and reserves and regulatory adjustments** | | |
| Directly issued qualifying common share capital (and equivalent for non-joint stock companies) plus related stock surplus | **$ 14,739** | $ 14,684 |
| Retained earnings | **37,645** | 31,442 |
| Accumulated other comprehensive income (and other reserves) | **4,626** | 2,418 |
| Directly issued capital subject to phase out from CET1 (only applicable to non-joint stock companies) | **–** | – |
| Common share capital issued by subsidiaries and held by third parties (amount allowed in group CET1) | **13** | 12 |
| Regulatory adjustments applied to CET1 under Basel III | **(13,308)** | (12,150) |
| **Common Equity Tier 1 capital (CET1)** | **$ 43,715** | $ 36,406 |
| **Additional Tier 1 capital: instruments and regulatory adjustments** | | |
| Directly issued qualifying Additional Tier 1 instruments plus related stock surplus | **2,350** | 1,000 |
| Directly issued capital instruments to phase out from Additional Tier 1 | **4,473** | 4,794 |
| Additional Tier 1 instruments issued by subsidiaries and held by third parties (amount allowed in group AT1) | **3** | 2 |
| Regulatory adjustments applied to Additional Tier 1 under Basel III | **–** | – |
| **Additional Tier 1 capital (AT1)** | **6,826** | 5,796 |
| **Tier 1 capital (T1=CET1+AT1)** | **$ 50,541** | $ 42,202 |
| **Tier 2 capital: instruments and provisions and regulatory adjustments** | | |
| Directly issued qualifying Tier 2 instruments plus related stock surplus | **3,073** | 2,010 |
| Directly issued capital instruments subject to phase out from Tier 2 | **4,227** | 5,595 |
| Tier 2 instruments issued by subsidiaries and held by third parties (amount allowed in group Tier 2) | **29** | 31 |
| Collective allowance | **134** | 182 |
| Regulatory adjustments applied to Tier 2 under Basel III | **–** | – |
| **Tier 2 capital (T2)** | **$ 7,463** | $ 7,818 |
| **Total capital (TC=T1+T2)** | **$ 58,004** | $ 50,020 |

**2015 vs. 2014**




(1) Represents rounded figures.
(2) Internal capital generation includes $5.3 billion which represents Net income available to shareholders less common and preferred shares dividends.

Our CET1 ratio was 10.6%, up 70 bps from last year, mainly due to strong internal capital generation. This factor was partially offset by higher RWA reflecting business growth, and the net impact of foreign exchange translation.
Our Tier 1 capital ratio of 12.2% was up 80 bps, mainly due to the factors noted under CET1 ratio, and the net issuance of preferred shares.
Our Total capital ratio of 14.0% was up 60 bps, mainly due to the factors noted under Tier 1 capital ratio, partially offset by the net redemption of subordinated debentures.

**Basel III RWA**

OSFI requires banks to meet minimum risk-based capital requirements for exposures to credit risk, operational risk, and, where they have significant trading activity, market risk. RWA is calculated for each of these risk types and added together to determine total RWA. In addition, OSFI requires the minimum risk-based capital to be no less than 90% of the capital requirements as calculated under the Basel I standards. If the capital requirement is less than 90%, a transitional adjustment to RWA must be applied as prescribed by OSFI CAR guidelines.

**Total capital risk-weighted assets** **Table 73**

| As at October 31 (Millions of Canadian dollars, except percentage amounts) | 2015 | | | | | | 2014 |
|---|---|---|---|---|---|---|---|
| | | | Risk-weighted assets | | | | |
| | Exposure (1) | Average of risk weights (2) | Standardized approach | Advanced approach | Other | Total | Total |
| **Credit risk** | | | | | | | |
| Lending-related and other | | | | | | | |
| Residential mortgages | $ 207,393 | 6% | $ 1,344 | $ 11,453 | $ – | $ 12,797 | $ 10,573 |
| Other retail | 226,661 | 23% | 4,771 | 46,386 | – | 51,157 | 48,976 |
| Business | 282,261 | 54% | 15,064 | 136,501 | – | 151,565 | 126,948 |
| Sovereign | 75,636 | 12% | 2,370 | 6,805 | – | 9,175 | 7,683 |
| Bank | 97,961 | 8% | 578 | 7,117 | – | 7,695 | 7,079 |
| Total lending-related and other | $ 889,912 | 26% | $ 24,127 | $ 208,262 | $ – | $232,389 | $201,259 |
| Trading-related | | | | | | | |
| Repo-style transactions | $ 340,131 | 2% | $ 15 | $ 6,637 | $ 28 | $ 6,680 | $ 4,912 |
| Derivatives – including CVA – CET1 phase-in adjustment | 90,782 | 32% | 1,300 | 16,581 | 11,451 | 29,332 | 26,875 |
| Total trading-related | $ 430,913 | 8% | $ 1,315 | $ 23,218 | $11,479 | $ 36,012 | $ 31,787 |
| Total lending-related and other and trading-related | $ 1,320,825 | 20% | $ 25,442 | $ 231,480 | $11,479 | $268,401 | $233,046 |
| Bank book equities | 2,057 | 99% | – | 2,045 | – | 2,045 | 2,025 |
| Securitization exposures | 55,932 | 13% | 310 | 7,053 | – | 7,363 | 5,830 |
| Regulatory scaling factor | n.a. | n.a. | n.a. | 14,400 | – | 14,400 | 11,938 |
| Other assets | 45,818 | 64% | n.a. | n.a. | 29,460 | 29,460 | 30,032 |
| Total credit risk | $ 1,424,632 | 23% | $ 25,752 | $ 254,978 | $40,939 | $321,669 | $282,871 |
| **Market risk** | | | | | | | |
| Interest rate | | | $ 1,339 | $ 6,835 | $ – | $ 8,174 | $ 6,326 |
| Equity | | | 1,616 | 2,115 | – | 3,731 | 1,621 |
| Foreign exchange | | | 927 | 61 | – | 988 | 1,274 |
| Commodities | | | 943 | 13 | – | 956 | 2,030 |
| Specific risk | | | 8,716 | 3,084 | – | 11,800 | 14,980 |
| Incremental risk charge | | | – | 14,137 | – | 14,137 | 12,229 |
| **Total market risk** | | | $ 13,541 | $ 26,245 | $ – | $ 39,786 | $ 38,460 |
| **Operational risk** | | | $ 50,301 | n.a. | n.a. | $ 50,301 | $ 47,263 |
| **CET1 capital risk-weighted assets** (3) | | | $ 89,594 | $ 281,223 | $40,939 | $411,756 | $368,594 |
| **Additional CVA adjustment, prescribed by OSFI, for Tier 1 capital** | | | – | – | 1,185 | 1,185 | 1,382 |
| **Tier 1 capital risk-weighted assets** (3) | | | $ 89,594 | $ 281,223 | $42,124 | $412,941 | $369,976 |
| **Additional CVA adjustment, prescribed by OSFI, for Total capital** | | | – | – | 1,016 | 1,016 | 2,074 |
| **Total capital risk-weighted assets** (3) | $ 1,424,632 | | $ 89,594 | $ 281,223 | $43,140 | $413,957 | $372,050 |

(1) Total exposure represents exposure at default which is the expected gross exposure upon the default of an obligor. This amount is before any allowance against impaired loans or partial write-offs and does not reflect the impact of credit risk mitigation and collateral held.

(2) Represents the average of counterparty risk weights within a particular category.

(3) Effective Q3 2014, different scalars were applied to the CVA included in each of the three tiers of capital. In Q3 and Q4, 2014, the CVA scalars 57%, 65% and 77% were applied to CET 1, Tier 1 and Total Capital, respectively. In fiscal 2015, the CVA scalars were 64%, 71% and 77%, respectively. In 2016, the scalars will remain unchanged.

**2015 vs. 2014**

During the year, CET1 RWA was up $43 billion, mainly reflecting the impact of foreign exchange translation and business growth largely in our wholesale lending portfolio and repo-style transactions.

**Selected capital management activity**

The following table provides our selected capital management activity for the year ended October 31, 2015.

**Selected capital management activity** — **Table 74**

| (Millions of Canadian dollars, except number of shares) | 2015 Issuance or redemption date | 2015 Number of shares (000s) | 2015 Amount |
|---|---|---|---|
| **Tier 1 capital** | | | |
| Common shares issued | | | |
| Stock options exercised (1) | | **1,190** | **$ 62** |
| Issuance of preferred shares Series BD (2), (3), (4) | **January 30, 2015** | **24,000** | **600** |
| Issuance of preferred shares Series BF (2), (3), (4) | **March 13, 2015** | **12,000** | **300** |
| Issuance of preferred shares Series BH (2), (3), (4) | **June 5, 2015** | **6,000** | **150** |
| Issuance of preferred shares Series BI (2), (3), (4) | **July 22, 2015** | **6,000** | **150** |
| Issuance of preferred shares Series BJ (2), (3), (4) | **October 2, 2015** | **6,000** | **150** |
| Redemption of preferred shares Series AX | **November 24, 2014** | **(13,000)** | **(325)** |
| **Tier 2 capital** | | | |
| Issuance of June 4, 2025 subordinated debentures (2), (4) | **June 4, 2015** | | **1,000** |
| Maturity of November 14, 2014 subordinated debentures (2) | **November 14, 2014** | | **(200)** |
| Redemption of June 15, 2020 subordinated debentures (2) | **June 15, 2015** | | **(1,500)** |

(1) Amounts include cash received for stock options exercised during the period and the fair value adjustments to stock options.
(2) For further details, refer to Notes 19 and 21 of our audited 2015 Annual Consolidated Financial Statements.
(3) Based on gross amount.
(4) NVCC capital instruments.

*Dividends*

Our common share dividend policy reflects our earnings outlook, payout ratio objective and the need to maintain adequate levels of capital to fund business opportunities. In 2015, our dividend payout ratio was 46%, which met our dividend payout ratio target of 40% to 50%. Common share dividends paid during the year were $4.4 billion.

**Selected share data** (1) **Table 75**

| (Millions of Canadian dollars, except number of and per share amounts) | 2015 Number of shares (000s) | 2015 Amount | 2015 Dividends declared per share | 2014 Number of shares (000s) | 2014 Amount | 2014 Dividends declared per share | 2013 Number of shares (000s) | 2013 Amount | 2013 Dividends declared per share |
|---|---|---|---|---|---|---|---|---|---|
| Common shares outstanding | **1,443,423** | **$14,573** | **$ 3.08** | 1,442,233 | $14,511 | $ 2.84 | 1,441,056 | $14,377 | $ 2.53 |
| First preferred shares outstanding | | | | | | | | | |
| Non-cumulative Series W (2) | **12,000** | **300** | **1.23** | 12,000 | 300 | 1.23 | 12,000 | 300 | 1.23 |
| Non-cumulative Series AA | **12,000** | **300** | **1.11** | 12,000 | 300 | 1.11 | 12,000 | 300 | 1.11 |
| Non-cumulative Series AB | **12,000** | **300** | **1.18** | 12,000 | 300 | 1.18 | 12,000 | 300 | 1.18 |
| Non-cumulative Series AC | **8,000** | **200** | **1.15** | 8,000 | 200 | 1.15 | 8,000 | 200 | 1.15 |
| Non-cumulative Series AD | **10,000** | **250** | **1.13** | 10,000 | 250 | 1.13 | 10,000 | 250 | 1.13 |
| Non-cumulative Series AE | **10,000** | **250** | **1.13** | 10,000 | 250 | 1.13 | 10,000 | 250 | 1.13 |
| Non-cumulative Series AF | **8,000** | **200** | **1.11** | 8,000 | 200 | 1.11 | 8,000 | 200 | 1.11 |
| Non-cumulative Series AG | **10,000** | **250** | **1.13** | 10,000 | 250 | 1.13 | 10,000 | 250 | 1.13 |
| Non-cumulative Series AH | **–** | **–** | **–** | – | – | – | – | – | 0.86 |
| Non-cumulative Series AJ (3) | **13,579** | **339** | **0.88** | 13,579 | 339 | 0.97 | 16,000 | 400 | 1.25 |
| Non-cumulative Series AK (3) | **2,421** | **61** | **0.67** | 2,421 | 61 | 0.53 | – | – | – |
| Non-cumulative Series AL (3) | **12,000** | **300** | **1.07** | 12,000 | 300 | 1.15 | 12,000 | 300 | 1.40 |
| Non-cumulative Series AN (3) | **–** | **–** | **–** | – | – | 0.39 | 9,000 | 225 | 1.56 |
| Non-cumulative Series AP (3) | **–** | **–** | **–** | – | – | 0.39 | 11,000 | 275 | 1.56 |
| Non-cumulative Series AR (3) | **–** | **–** | **–** | – | – | 0.39 | 14,000 | 350 | 1.56 |
| Non-cumulative Series AT (3) | **–** | **–** | **–** | – | – | 1.17 | 11,000 | 275 | 1.56 |
| Non-cumulative Series AV (3) | **–** | **–** | **–** | – | – | 1.17 | 16,000 | 400 | 1.56 |
| Non-cumulative Series AX (3) | **–** | **–** | **–** | 13,000 | 325 | 1.53 | 13,000 | 325 | 1.53 |
| Non-cumulative Series AZ (3), (4) | **20,000** | **500** | **1.00** | 20,000 | 500 | 0.50 | – | – | – |
| Non-cumulative Series BB (3), (4) | **20,000** | **500** | **0.98** | 20,000 | 500 | 0.46 | – | – | – |
| Non-cumulative Series BD (3), (4) | **24,000** | **600** | **0.73** | – | – | – | – | – | – |
| Non-cumulative Series BF (3), (4) | **12,000** | **300** | **0.63** | – | – | – | – | – | – |
| Non-cumulative Series BH (4) | **6,000** | **150** | **0.58** | – | – | – | – | – | – |
| Non-cumulative Series BI (4) | **6,000** | **150** | **0.42** | – | – | – | – | – | – |
| Non-cumulative Series BJ (4) | **6,000** | **150** | **–** | – | – | – | – | – | – |
| Treasury shares held – preferred | **(63)** | **(2)** | | 1 | – | | 47 | 1 | |
| Treasury shares held – common | **532** | **38** | | 892 | 71 | | 666 | 41 | |
| Stock options | | | | | | | | | |
| Outstanding | **8,182** | | | 8,579 | | | 10,604 | | |
| Exercisable | **5,231** | | | 4,987 | | | 5,711 | | |
| Dividends | | | | | | | | | |
| Common | | **4,443** | | | 4,097 | | | 3,651 | |
| Preferred | | **191** | | | 213 | | | 253 | |

(1) For further details about our capital management activity, refer to Note 21 of our audited 2015 Annual Consolidated Financial Statements.
(2) Effective February 24, 2010, we have the right to convert into common shares at our option, subject to certain restrictions.
(3) Dividend rate will reset every five years.
(4) NVCC capital instruments.

Our normal course issuer bid (NCIB) commenced on November 1, 2014 and expired on October 31, 2015. Over the term of the previous bid, we did not purchase any common shares.

On November 2, 2015, we completed the acquisition of City National, whereby we issued 41.6 million RBC common shares. In addition, we issued RBC first preferred shares (Series C-1 and Series C-2) with a par value of US$275 million upon the cancellation of all outstanding City National preferred stock.

On November 2, 2015, we redeemed all $1.5 billion outstanding 3.18% subordinated debentures due on November 2, 2015 for 100% of their principal amount plus accrued interest to the redemption date.

On November 16, 2015, we announced our intention to redeem all issued and outstanding $1.2 billion principal amount of RBC TruCS 2015 for cash at a redemption price of $1,000 per unit. The redemption is expected to be completed on December 31, 2015.

As at November 27, 2015, the number of outstanding common shares and stock options and awards was 1,485,401,829 and 14,675,359, respectively, and the number of Treasury shares – preferred and Treasury shares – common was (9,137) and 291,505, respectively.

NVCC provisions require the conversion of our capital instruments into a variable number of common shares in the event that OSFI deems the Bank to be non-viable or a federal or provincial government in Canada publicly announces that the Bank has accepted or agreed to accept a capital injection. If a NVCC trigger event were to occur, our NVCC capital instruments preferred shares Series AZ, preferred shares Series BB, preferred shares Series BD, preferred shares Series BF, preferred shares Series BH, preferred shares Series BI, preferred shares Series BJ, subordinated debentures due on July 17, 2024, subordinated debentures due on September 29, 2026 and subordinated debentures due on June 4, 2025 would be converted into RBC common shares pursuant to an automatic conversion formula with a conversion price based on the greater of: (i) a floor price of $5.00, and (ii) the current market price of our common shares at the time of the trigger event (10-day weighted average). Based on a floor price of $5.00 and including an estimate for accrued dividends and interest, these NVCC capital instruments would convert into a maximum of 1,388 million RBC common shares, in aggregate, which would represent a dilution impact of 49% based on the number of RBC common shares outstanding as at October 31, 2015.

**Attributed capital**

Our methodology for allocating capital to our business segments is based on the higher of fully diversified economic capital and the Basel III regulatory capital requirements. Risk-based capital attribution provides a uniform base for performance measurement among business segments, which compares to our overall corporate return objective and facilitates management decisions in resource allocation in conjunction with other factors.

Attributed capital is calculated and attributed on a wider-array of risks compared to Basel III regulatory capital requirements, which are calibrated predominantly to target credit, market (trading) and operational risk measures. Economic capital is our internal quantification of risks associated with business activities which is the capital required to remain solvent under extreme market conditions, reflecting our objective to maintain strong credit ratings. Economic capital is calculated based on credit, market (trading and non-trading), operational, business and fixed asset, and insurance risks, along with capital attribution for goodwill and other intangibles. The common risks between the two frameworks are aligned to reflect increased regulatory requirements.

- Business risk is the risk of loss or harm due to variances in volumes, prices and costs caused by competitive forces, regulatory changes, reputation and strategic risks.
- Fixed asset risk is defined as the risk that the value of fixed assets will be less than their book value at a future date.

For further discussion on Credit, Market, Operational and Insurance risks, refer to the Risk management section.

Attributed capital is also used to assess the adequacy of our capital base. Our policy is to maintain a level of available capital, defined as common equity and other capital instruments with equity-like loss absorption features such as preferred shares that exceed Economic capital with a comfortable cushion.

The calculation and attribution of capital involves a number of assumptions and judgments by management which are monitored to ensure that the economic capital framework remains comprehensive and consistent. The models are benchmarked to leading industry practices via participation in surveys, reviews of methodologies and ongoing interaction with external risk management industry professionals.

The following outlines our attributed capital.

**Attributed capital** — Table 76

| (Millions of Canadian dollars) | 2015 | 2014 |
|---|---|---|
| Credit risk | **$16,400** | $ 13,800 |
| Market risk (trading and non-trading) | **3,900** | 3,900 |
| Operational risk | **4,600** | 4,300 |
| Business and fixed asset risk | **2,900** | 2,750 |
| Insurance risk | **550** | 500 |
| Goodwill and other intangibles | **11,900** | 11,350 |
| Regulatory capital allocation | **5,400** | 4,150 |
| Attributed capital | **$45,650** | $ 40,750 |
| Under attribution of capital | **6,650** | 4,950 |
| **Average common equity** | **$52,300** | $ 45,700 |

**2015 vs. 2014**

Attributed capital increased $5 billion largely due to higher credit risk reflecting business growth and the impact of foreign exchange translation, and higher regulatory capital allocation. The increase in operational and business risks reflected higher revenue. Goodwill and other intangibles risk increased mainly as a result of the impact of foreign exchange translation.

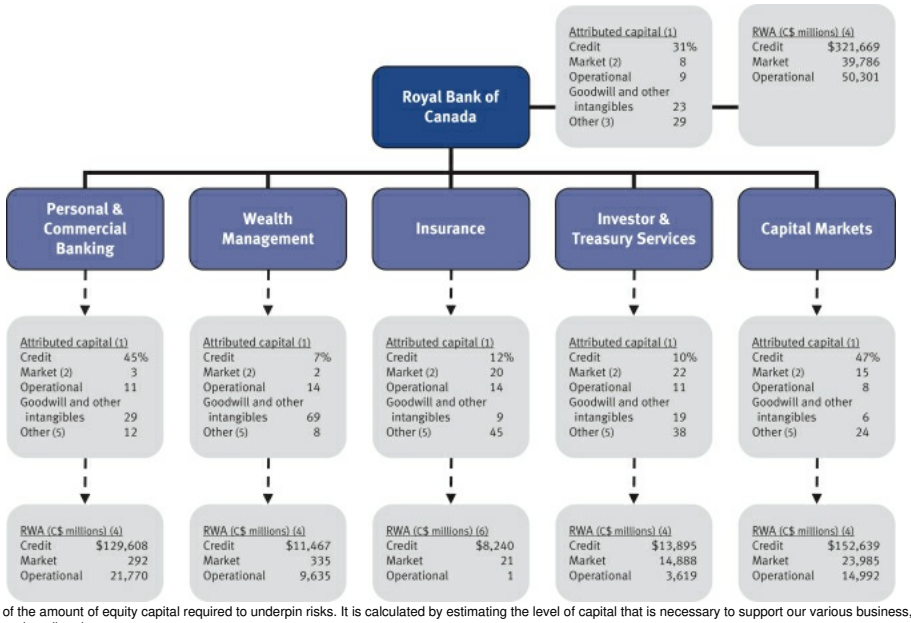
We remain well capitalized with current levels of available capital exceeding the attributed capital required to underpin all of our material risks.

**Attributed capital in the context of our business activities**

In carrying out our business activities, we are exposed to a range of risks. The following chart provides a high level view of risks within our business segments, which includes credit, market and operational risks. We have used attributed capital to illustrate the relative size of the risks in each of our businesses. The attributed capital distribution reflects the diversified nature of our business activities. RWA represents our exposure to credit, market and operational risk for regulatory capital requirements.

Within Personal & Commercial Banking, credit risk is the most significant risk, largely related to our personal financial services, business financial services and cards businesses. The primary risks within Wealth Management, which provides services to institutional and individual clients, are operational risk and credit risk. Risks within our Insurance operations are primarily related to insurance risk in our life, health, home and auto businesses followed by market risk and operational risk. The largest risk within Investor & Treasury Services is market risk, followed by credit risk and operational risk. The most significant risk within Capital Markets is credit risk, followed by market risk.

For additional information on the risks highlighted below, refer to the Risk management section.




(1) Attributed capital: An estimate of the amount of equity capital required to underpin risks. It is calculated by estimating the level of capital that is necessary to support our various business, given their risks, consistent with our desired solvency standard and credit ratings.
(2) Market risk attributed capital: An estimate of the amount of equity capital required to underpin trading market risk and interest rate risk.
(3) Other – RBC: Includes (a) an estimate of the amount of equity capital required to underpin risks associated with business, fixed assets and insurance risks; (b) a regulatory capital adjustment since attributed capital is determined at the higher of regulatory or economic capital; and (c) unattributed capital reported representing common equity in excess of common equity attributed to our business segments which is reported in the Corporate Support segment only.
(4) RWA amount above represents RWA for CET1.
(5) Other – Business segments: Includes (a) an estimate of the amount of equity capital required to underpin risks associated with business, fixed assets and insurance risks; and (b) a regulatory capital adjustment since attributed capital is determined at the business segment level as the greater of regulatory or economic capital.
(6) Insurance RWA amount above represents our investments in the insurance subsidiaries capitalized at the regulatory prescribed rate as required under Basel CAR filing.

**Subsidiary capital**

Our capital management framework includes the management of our subsidiaries' capital. We invest capital across the enterprise to meet any local regulators' capital adequacy requirements and maximize returns to our shareholders. We invest in our subsidiaries as appropriate during the year. We set guidelines for defining capital investments in our subsidiaries and manage the relationship between capital invested in subsidiaries and our consolidated capital base to ensure that we can access capital recognized in our consolidated regulatory capital measurements.

Each of our subsidiaries has responsibility for maintaining its compliance with any local regulatory capital adequacy requirements, which may include restrictions on the transfer of assets in the form of cash, dividends, loans or advances. Concurrently, Corporate Treasury provides centralized oversight of capital adequacy across all subsidiary entities.

**Other considerations affecting capital**

Capital treatment for equity investments in other entities is determined by a combination of accounting and regulatory guidelines based on the size or nature of the investment. Three broad approaches apply as follows:

- Consolidation: entities which we control are consolidated on our Consolidated Balance Sheets.
- Deduction: certain holdings are deducted in full from our regulatory capital. These include all unconsolidated "substantial investments," as defined by the Bank Act (Canada) in the capital of financial institutions, as well as all investments in insurance subsidiaries.
- Risk weighting: unconsolidated equity investments that are not deducted from capital are risk weighted at a prescribed rate for determination of capital charges.

*Regulatory capital approach for securitization exposures*

For our securitization exposures, we use an internal assessment approach (IAA) for exposures related to our ABCP business, and for other securitization exposures we use a combination of approaches including a ratings-based approach and the standardized approach.

While our IAA rating methodologies are based in large part on criteria that are published by External Credit Assessment Institutions (ECAIs) such as S&P and therefore are similar to the methodologies used by these institutions, they are not identical. Our ratings process includes a comparison of the available credit enhancement in a securitization structure to a stressed level of projected losses. The stress level used is determined by the desired risk profile of the transaction. As a result, we stress the cash flows of a given transaction at a higher level in order to achieve a higher rating. Conversely, transactions that only pass lower stress levels achieve lower ratings.

Most of the other securitization exposures (non-ABCP) carry external ratings and we use the lower of our own rating or the lowest external rating for determining the proper capital allocation for these positions. We periodically compare our own ratings to ECAIs ratings to ensure that the ratings provided by ECAIs are reasonable.

GRM has responsibility for providing risk assessments for capital purposes in respect of all our banking book exposures. GRM is independent of the business originating the securitization exposures and performs its own analysis, sometimes in conjunction with but always independent of the applicable business. GRM has developed asset class specific criteria guidelines which provide the rating methodologies for each asset class. The guidelines are reviewed periodically and are subject to the ratings replication process mandated by Pillar I of the Basel rules.

## Additional financial information

**Exposure to U.S. subprime and Alt-A through RMBS, CDOs and mortgages**

Certain activities and transactions we enter into expose us to the risk of default of U.S. subprime and Alt-A residential mortgages. Our exposures to U.S. subprime and Alt-A residential mortgages of $423 million represented less than 0.1% of our total assets as at October 31, 2015, compared to $396 million or less than 0.1% last year. The increase of $27 million was primarily due to the impact of foreign exchange translation.

**Commercial mortgage-backed securities**

The fair value of our total direct holdings of Canadian and U.S. commercial mortgage-backed securities was $379 million as at October 31, 2015.

**Assets and liabilities measured at fair value**

Our financial instruments carried at fair value are classified as Level 1, 2 or 3, in accordance with the fair value hierarchy set out in IFRS 13 Fair Value Measurement. For further details on the fair value of our financial instruments and transfers between levels of the fair value hierarchy, refer to Note 3 of our audited 2015 Annual Consolidated Financial Statements.

The following table presents the total fair value of each major class of financial assets and financial liabilities measured at fair value and the percentage of the fair value of each class categorized as Level 1, 2 or 3 as at October 31, 2015.

**Assets and liabilities measured at fair value** — Table 77

| (Millions of Canadian dollars, except percentage amounts) | As at October 31, 2015 | | | | |
|---|---|---|---|---|---|
| | **Fair value** (1) | **Level 1** (1) | **Level 2** (1) | **Level 3** (1) | **Total** |
| **Financial assets** | | | | | |
| Securities at FVTPL | $ 158,703 | 39% | 61% | 0% | 100% |
| Available-for-sale | 48,149 | 12 | 80 | 8 | 100 |
| Assets purchased under reverse repurchase agreements and securities borrowed | 114,692 | 0 | 100 | 0 | 100 |
| Loans | 2,773 | 0 | 83 | 17 | 100 |
| Derivatives | 193,153 | 2 | 97 | 1 | 100 |
| **Financial liabilities** | | | | | |
| Deposits | $ 115,592 | 0% | 100% | 0% | 100% |
| Obligations related to securities sold short | 47,658 | 67 | 33 | 0 | 100 |
| Obligations related to assets sold under repurchase agreements and securities loaned | 73,362 | 0 | 100 | 0 | 100 |
| Derivatives | 195,820 | 2 | 97 | 1 | 100 |

(1) The derivative assets and liabilities presented in the table above do not reflect the impact of netting.

## Accounting and control matters

### Critical accounting policies and estimates

**Application of critical accounting policies, judgments, estimates and assumptions**

Our significant accounting policies are described in Note 2 to our audited 2015 Annual Consolidated Financial Statements. Certain of these policies, as well as estimates made by management in applying such policies, are recognized as critical because they require us to make particularly subjective or complex judgments about matters that are inherently uncertain and because of the likelihood that significantly different amounts could be reported under different conditions or using different assumptions. Our critical accounting judgments, estimates and assumptions relate to the fair value of financial instruments, allowance for credit losses, goodwill and other intangible assets, employee benefits, consolidation, derecognition of financial assets, securities impairment, application of the effective interest method, provisions, insurance claims and policy benefit liabilities and income taxes. Our critical accounting policies and estimates have been reviewed and approved by our Audit Committee, in consultation with management, as part of their review and approval of our significant accounting policies, judgments, estimates and assumptions.

**Fair value of financial instruments and securities impairment**

The fair value of a financial instrument is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. We determine fair value by incorporating all factors that market participants would consider in setting a price, including commonly accepted valuation approaches.

The Board of Directors provides oversight on valuation of financial instruments, primarily through the Audit Committee and Risk Committee. The Audit Committee reviews the presentation and disclosure of financial instruments that are measured at fair value, while the Risk Committee assesses adequacy of governance structures and control processes for valuation of these instruments.

We have established policies, procedures and controls for valuation methodologies and techniques to ensure fair value is reasonably estimated. Major valuation processes and controls include, but are not limited to, profit and loss decomposition, independent price verification (IPV) and model validation standards. These control processes are managed by either Finance or GRM and are independent of the relevant businesses and their trading functions. Profit and loss decomposition is a process to explain the fair value changes of certain positions and is performed daily for trading portfolios. All fair value instruments are subject to IPV, a process whereby trading function valuations are verified against external market prices and other relevant market data. Market data sources include traded prices, brokers and price vendors. We give priority to those third-party pricing services and prices having the highest and most consistent accuracy. The level of accuracy is determined over time by comparing third-party price values to traders' or system values, to other pricing service values and, when available, to actual trade data. Other valuation techniques are used when a price or quote is not available. Some valuation processes use models to determine fair value. We have a systematic and consistent approach to control model use. Valuation models are approved for use within our model risk management framework. The framework addresses, among other things, model development standards, validation processes and procedures, and approval authorities. Model validation ensures that a model is suitable for its intended use and sets parameters for its use. All models are revalidated regularly by qualified personnel who are independent of the model design and development. Annually our model risk profile is reported to the Board of Directors.

In determining fair value, a hierarchy is used which prioritizes the inputs to valuation techniques. The fair value hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). Determination of fair value based on this hierarchy requires the use of observable market data whenever available. Level 1 inputs are unadjusted quoted prices in active markets for identical assets or liabilities that we have the ability to access at the measurement date. Level 2 inputs include quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active, and model inputs that are either observable, or can be corroborated by observable market data for substantially the full term of the assets or liabilities. Level 3 inputs are one or more inputs that are unobservable and significant to the fair value of the asset or liability. Unobservable inputs are used to measure fair value to the extent that observable inputs are not available at the measurement date. The availability of inputs for valuation may affect the selection of valuation techniques. The classification of a financial instrument in the hierarchy for disclosure purposes is based upon the lowest level of input that is significant to the measurement of fair value.

Where observable prices or inputs are not available, management judgment is required to determine fair values by assessing other relevant sources of information such as historical data, proxy information from similar transactions, and through extrapolation and interpolation techniques. For more complex or illiquid instruments, significant judgment is required in the determination of the model used, the selection of model inputs, and in some cases the application of valuation adjustments to the model value or quoted price for inactively traded financial instruments, as the selection of model inputs may be subjective and the inputs may be unobservable. Unobservable inputs are inherently uncertain as there is little or no market data available from which to determine the level at which the transaction would occur under normal business circumstances. Appropriate parameter uncertainty and market risk valuation adjustments for such inputs and other model risk valuation adjustments are assessed in all such instances.

We record valuation adjustments to appropriately reflect counterparty credit quality of our derivative portfolio, differences between the overnight index swap (OIS) curve and London Interbank Offered Rates (LIBOR) for collateralized derivatives, funding valuation adjustments (FVA) for uncollateralized and under-collateralized OTC derivatives, unrealized gains or losses at inception of the transaction, bid-offer spreads, unobservable parameters and model limitations. These adjustments may be subjective as they require significant judgment in the input selection, such as probability of default and recovery rate, and are intended to arrive at fair value that is determined based on assumptions that market participants would use in pricing the financial instrument. The realized price for a transaction may be different from its recorded value that is previously estimated using management judgment, and may therefore impact unrealized gains and losses recognized in Non-interest income – Trading revenue or Other.

Valuation adjustments are recorded for the credit risk of our derivative portfolios in order to arrive at their fair values. CVA take into account our counterparties' creditworthiness, the current and potential future mark-to-market of the transactions, and the effects of credit mitigants such as master netting and collateral agreements. CVA amounts are derived from estimates of exposure at default, probability of default, recovery rates on a counterparty basis, and market and credit factor correlations. Exposure at default is the amount of expected derivative related assets and liabilities at the time of default, estimated through modeling using underlying risk factors. Probability of default and recovery rate are generally implied from the market prices for credit protection and credit ratings of the counterparty. Correlation is the statistical measure of how credit and market factors may move in relation to one another. Correlation is estimated using historical data and market data where available. CVA is calculated daily and changes are recorded in Non-interest income – Trading revenue.

In the determination of fair value of collateralized OTC derivatives using the OIS curve, our valuation approach accounts for the difference between certain OIS rates and LIBOR for derivatives valuation as valuation adjustments.

FVA are also calculated to incorporate cost and benefit of funding in the valuation of uncollateralized and under-collateralized OTC derivatives. Future expected cash flows of these derivatives are discounted to reflect the cost and benefit of funding the derivatives by using a funding curve, implied volatilities and correlations as inputs.

Where required, a valuation adjustment is made to reflect the unrealized gain or loss at inception of a financial instrument contract where the fair value of that financial instrument is not obtained from a quoted market price or cannot be evidenced by other observable market transactions based on a valuation technique incorporating observable market data.

A bid-offer valuation adjustment is required when a financial instrument is valued at the mid-market price, instead of the bid or offer price for asset or liability positions, respectively. The valuation adjustment takes into account the spread from the mid to either the bid or offer price.

Some valuation models require parameter calibration from such factors as market observed option prices. The calibration of parameters may be sensitive to factors such as the choice of instruments or optimization methodology. A valuation adjustment is also estimated to mitigate the uncertainties of parameter calibration and model limitations.

We classify our financial instruments measured at fair value on a recurring basis into three levels based on the transparency of the inputs used to measure the fair values of the instruments. As at October 31, 2015, Level 2 instruments, whose fair values are based on observable inputs, include $456 billion of financial assets (October 31, 2014 – $355 billion) and $394 billion of financial liabilities (October 31, 2014 – $296 billion). These amounts represent 85% of our total financial assets at fair value (October 31, 2014 – 81%) and 91% of our total financial liabilities at fair value (October 31, 2014 – 89%), respectively. Level 3 instruments, whose valuations include significant unobservable inputs, include $6 billion of financial assets (October 31, 2014 – $6 billion) and $2 billion of financial liabilities (October 31, 2014 – $2 billion), representing 1% of our total financial assets at fair value (October 31, 2014 – 1%) and 1% of our total financial liabilities at fair value (October 31, 2014 – 1%), respectively.

At each reporting date or more frequently when conditions warrant, we evaluate our AFS securities to determine whether there is any objective evidence of impairment, such as a significant or prolonged decline in the fair value of the security below its cost or when an adverse effect on future cash flows from the security can be reliably estimated. When assessing impairment for debt instruments we primarily consider counterparty ratings and security-specific factors, including collateral, external ratings, subordination and other market factors. For complex debt instruments including U.S. non-agency MBS, ABS and other structured products, we also use cash flow projection models which incorporate actual and projected cash flows for each security using a number of assumptions and inputs that are based on security specific factors. The inputs and assumptions used such as default, prepayment and recovery rates are based on updated market data. For U.S. non-agency MBS, recovery rates are largely dependent upon forecasted property prices which were assessed at the municipal level, provided by a third-party vendor. In addition, we also consider the transaction structure and credit enhancement for the structured securities. If the result indicates that we will not be able to recover the entire principal and interest amount, we do a further review of the security in order to assess whether a loss would ultimately be realized. As equity securities do not have contractual cash flows, they are assessed differently than debt securities. In assessing whether there is any objective evidence that suggests that the security is impaired we consider factors which include the length of time and extent the fair value has been below the cost and the financial condition and near term prospects of the issuer. We also consider the estimated recoverable value and the period of recovery. We conduct further analysis for securities where the fair value had been below cost for greater than twelve months. If an AFS security is impaired, the cumulative unrealized losses previously recognized in Other components of equity are recognized directly in income under Non-interest income. As at October 31, 2015, our gross unrealized losses on AFS securities were $304 million (October 31, 2014 – $181 million). Refer to Note 4 to our audited 2015 Annual Consolidated Financial Statements for more information.

**Allowance for credit losses**

We maintain allowance for credit losses relating to on-balance sheet exposures, such as loans and acceptances, and off-balance sheet items such as letters of credit, guarantees and unfunded commitments, at levels that management considers appropriate to cover credit related losses incurred as at the balance sheet date.

Allowances are determined individually for loans that are individually significant, and collectively for loans that are not individually significant and loans which are significant but for which there is no objective evidence of impairment, using current and historical credit information in both quantitative and qualitative assessments. For further information on allowance for credit losses, refer to Note 5 to our audited 2015 Annual Consolidated Financial Statements.

*Individually assessed loans*

Loans which are individually significant are assessed individually for objective indicators of impairment. A loan is considered impaired when management determines that it will not be able to collect all amounts due according to the original contractual terms or the equivalent value.

Credit exposures of individually significant loans are evaluated based on factors including the borrower's overall financial condition, resources and payment record, and where applicable, the realizable value of any collateral. If there is evidence of impairment leading to an impairment loss, then the amount of the loss is determined as the difference between the carrying amount of the loan, including accrued interest, and the estimated recoverable amount. The estimated recoverable amount is measured as the present value of expected future cash flows discounted at the loan's original effective interest rate, including cash flows that may result from the realization of collateral less costs to sell.

*Collectively assessed loans*

Loans which are not individually significant, or which are individually assessed and not determined to be impaired, are collectively assessed for impairment. For the purposes of a collective evaluation of impairment, loans are grouped on the basis of similar risk characteristics, taking into account loan type, industry, geographic location, collateral type, past due status and other relevant factors.

The collective impairment allowance is determined by reviewing factors including: (i) historical loss experience, which takes into consideration historical probabilities of default, loss given default and exposure at default, in portfolios of similar credit risk characteristics, and (ii) management's judgment on the level of impairment losses based on historical experience relative to the actual level as reported at the balance sheet date, taking into consideration the current portfolio credit quality trends, business and economic and credit conditions, the impact of policy and process changes, and other supporting factors. Future cash flows for a group of loans are collectively evaluated for impairment on the basis of the contractual cash flows of the loans in the group and historical loss experience for loans with credit risk characteristics similar to those in the group. Historical loss experience is adjusted based on current observable data to reflect the effects of current conditions that did not affect the period on which the historical loss experience is based and to remove the effects of conditions in the historical period that do not currently exist. The methodology and assumptions used for estimating future cash flows are reviewed regularly to reduce any differences between loss estimates and actual loss experience.

*Write-off of loans*

Loans and the related impairment allowance for credit losses are written off, either partially or in full, when there is no realistic prospect of recovery. Where loans are secured, they are generally written off after receipt of any proceeds from the realization of the collateral. 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. For credit cards, the balances and related allowance for credit losses are written off when payment is 180 days in arrears. Personal loans are generally written off at 150 days past due.

*Total allowance for credit losses*

Based on the procedures discussed above, management believes that the total allowance for credit losses of $2,120 million is adequate to absorb estimated credit losses incurred in the lending portfolio as at October 31, 2015 (October 31, 2014 – $2,085 million). This amount includes $91 million (October 31, 2014 – $91 million) classified in Provisions under Other liabilities on our Consolidated Balance Sheets, which relates to off-balance sheet and other items.

**Goodwill and other intangible assets**

We allocate goodwill to groups of cash-generating units (CGU). Goodwill is not amortized and is tested for impairment on an annual basis, or more frequently if there are objective indications of impairment. We test for impairment by comparing the recoverable amount of a CGU with its carrying amount. A CGU's recoverable amount is the higher of its fair value less cost of disposal and its value in use. The carrying amount of a CGU comprises the carrying amount of assets, liabilities, and goodwill allocated to the CGU. When the carrying value of a CGU exceeds its recoverable amount, the impairment loss is allocated first to reduce the carrying amount of any goodwill allocated to the CGU and then to the other assets of the CGU proportionally based on the carrying amount of each asset. Any impairment charge is recognized in income in the period it is identified. Subsequent reversals of goodwill impairment are prohibited.

We estimate the value in use and fair value less costs of disposal of our CGUs primarily using a discounted cash flow method which incorporates each CGU's internal forecasts of revenues and expenses. Significant management judgment is applied in the determination of expected future cash flows (uncertainty in timing and amount), discount rates (based on CGU-specific risks) and terminal growth rates. CGU-specific risks include country risk, business/operational risk, geographic risk (including political risk, devaluation risk and government regulation), currency risk and price risk (including product pricing risk and inflation). If the forecast earnings and other assumptions in future periods deviate significantly from the current amounts used in our impairment testing, the value of our goodwill could become impaired.

Other intangible assets with a finite life are amortized on a straight-line basis over their estimated useful lives as follows: computer software – 3 to 10 years and customer relationships – 10 to 20 years. They are assessed for indicators of impairment at each reporting period if there is an indication that an asset may be impaired. An impairment test is performed by comparing the carrying amount of the intangible asset to its recoverable amount. Where it is not possible to estimate the recoverable amount of an individual asset, we estimate the recoverable amount of the CGU to which the asset belongs. If the recoverable amount of the asset (or CGU) is less than its carrying amount, the carrying amount of the intangible asset is written down to its recoverable amount as an impairment loss. An impairment loss recognized previously is reversed if there is a change in the estimates used to determine the recoverable amount of the asset (or CGU) since the last impairment loss was recognized. If an impairment loss is subsequently reversed, the carrying amount of the asset (or CGU) is revised to the lower of its recoverable amount and the carrying amount that would have been determined (net of amortization) had there been no prior impairment.

Significant judgment is applied in estimating the useful lives and recoverable amounts of our intangible assets and assessing whether certain events or circumstances constitute objective evidence of impairment. We do not have any other intangible assets with indefinite lives.

As at October 31, 2015, we had $9.3 billion of goodwill (October 31, 2014 – $8.6 billion) and $2.8 billion of other intangible assets (October 31, 2014 – $2.8 billion). For further details, refer to Notes 2 and 10 to our 2015 Annual Consolidated Financial Statements.

**Employee benefits**

We sponsor a number of benefit programs for eligible employees, including registered pension plans, supplemental pension plans, health, dental, disability and life insurance plans.

The calculation of defined benefit expenses and obligations depends on various assumptions such as discount rates, healthcare cost trend rates, projected salary increases, retirement age, and mortality and termination rates. The discount rate assumption is determined using spot rates from a derived Aa corporate bond yield curve for our Canadian pension and other post-employment benefit plans, and spot rates from an Aa corporate bond yield curve for our International pension and other post-employment benefit plans. All other assumptions are determined by management, applying significant judgment, and are reviewed by the actuaries. Actual experience that differs from the actuarial assumptions will affect the amounts of benefit obligations and remeasurements that we recognize. The weighted average assumptions used and the sensitivity of key assumptions are presented in Note 17 to our audited 2015 Annual Consolidated Financial Statements.

**Consolidation**

Subsidiaries are those entities, including structured entities, over which we have control. We control an entity when we are exposed, or have rights, to variable returns from our involvement with the entity and have the ability to affect those returns through our power over the investee. We have power over an entity when we have existing rights that give us the current ability to direct the activities that most significantly affect the entity's returns (relevant activities). Power may be determined on the basis of voting rights or, in the case of structured entities, other contractual arrangements.

We are not deemed to control an entity when we exercise power over an entity in an agency capacity. In determining whether we are acting as an agent, we consider the overall relationship between us, the investee and other parties to the arrangement with respect to the following factors: (i) the scope of our decision making power; (ii) the rights held by other parties; (iii) the remuneration to which we are entitled; and (iv) our exposure to variability of returns.

The determination of control is based on the current facts and circumstances and is continuously assessed. In some circumstances, different factors and conditions may indicate that various parties control an entity depending on whether those factors and conditions are assessed in isolation or in totality. Significant judgment is applied in assessing the relevant factors and conditions in totality when determining whether we control an entity. Specifically, judgment is applied in assessing whether we have substantive decision making rights over the relevant activities and whether we are exercising our power as a principal or an agent.

We consolidate all subsidiaries from the date control is transferred to us, and cease consolidation when an entity is no longer controlled by us. Our consolidation conclusions affect the classification and amount of assets, liabilities, revenues and expenses reported in our Consolidated Financial Statements.

Non-controlling interests in subsidiaries that we consolidate are shown on our Consolidated Balance Sheets as a separate component of equity which is distinct from our shareholders' equity. The net income attributable to non-controlling interests is separately disclosed in our Consolidated Statements of Income.

For further details, refer to Off-balance sheet arrangements and Note 7 to our audited 2015 Annual Consolidated Financial Statements.

**Derecognition of financial assets**

We periodically enter into transactions in which we transfer financial assets such as loans or packaged MBS to structured entities or trusts that issue securities to investors. We derecognized the assets when our contractual rights to the cash flows from the assets have expired, when we retain the rights to receive the cash flows but assume an obligation to pay those cash flows to a third party subject to certain pass-through requirements, or when we transfer our contractual rights to receive the cash flows and substantially all of the risks and rewards of the assets have been transferred. When we retain substantially all of the risks and rewards of the transferred assets, the transferred assets are not derecognized from our Consolidated Balance Sheets and are accounted for as secured financing transactions. When we neither retain nor transfer substantially all risks and rewards of ownership of the assets, we derecognize the assets if control over the assets is relinquished. If we retain control over the transferred assets, we continue to recognize the transferred assets to the extent of our continuing involvement. Management's judgment is applied in determining whether we have transferred or retained substantially all risk and rewards of ownership of the transferred financial asset.

The majority of assets transferred under repurchase agreements, securities lending agreements, and in our Canadian residential mortgage securitization transactions do not qualify for derecognition; as a result, we continue to record the associated transferred assets on our Consolidated Balance Sheets and no gains or losses are recognized for these securitization activities. Otherwise, a gain or loss is recognized on securitization by comparing the carrying amount of the transferred asset with its fair value at the date of the transfer. As at October 31, 2015, the carrying and fair values of the transferred assets that do not qualify for derecognition were $119 billion and $119 billion, respectively (October 31, 2014 – $101 billion and $101 billion), and the carrying and fair values of the associated liabilities totalled $119 billion and $120 billion, respectively (October 31, 2014 – $101 billion and $102 billion). For further information on derecognition of financial assets, refer to Note 6 to our audited 2015 Annual Consolidated Financial Statements.

**Application of the effective interest method**
Interest is recognized in Interest income and Interest expense in the Consolidated Statements of Income for all interest bearing financial instruments using the effective interest method. The effective interest rate is the rate that discounts estimated future cash flows over the expected life of the financial asset or liability to the net carrying amount upon initial recognition. Significant judgment is applied in determining the effective interest rate due to uncertainty in the timing and amounts of future cash flows.

**Provisions**
Provisions are liabilities of uncertain timing or amount and are recognized when we have a present legal or constructive obligation as a result of a past event, it is probable that an outflow of resources will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation. Provisions are measured as the best estimate of the consideration required to settle the present obligation at the reporting date. Significant judgment is required in determining whether a present obligation exists and in estimating the probability, timing and amount of any outflows. We record provisions related to litigation, asset retirement obligations, and the allowance for off-balance sheet and other items. Provisions are recorded under Other liabilities on our Consolidated Balance Sheets.

We are required to estimate the results of ongoing legal proceedings, expenses to be incurred to dispose of capital assets, and credit losses on undrawn commitments and guarantees. The forward-looking nature of these estimates requires us to use a significant amount of judgment in projecting the timing and amount of future cash flows. We record our provisions on the basis of all available information at the end of the reporting period and make adjustments on a quarterly basis to reflect current expectations. Should actual results differ from our expectations, we may incur expenses in excess of the provisions recognized.

When some or all of the economic benefits required to settle a provision are expected to be recovered from a third party, such as an insurer, a separate asset is recognized if it is virtually certain that reimbursement will be received.

**Insurance claims and policy benefit liabilities**
Insurance claims and policy benefit liabilities represent current claims and estimates for future insurance policy benefits. Liabilities for life insurance contracts are determined using the Canadian Asset Liability Method, which incorporates assumptions for mortality, morbidity, policy lapses and surrenders, investment yields, policy dividends, operating and policy maintenance expenses, and provisions for adverse deviation. These assumptions are reviewed at least annually and updated in response to actual experience and market conditions. Liabilities for property and casualty insurance represent estimated provisions for reported and unreported claims. Liabilities for life and property and casualty insurance are included in Insurance claims and policy benefit liabilities. Changes in Insurance claims and policy benefit liabilities are included in the Insurance policyholder benefits, claims and acquisition expense in our Consolidated Statements of Income in the period in which the estimates change.

**Income taxes**
We are subject to income tax laws in various jurisdictions where we operate, and the complex tax laws are potentially subject to different interpretations by us and the relevant taxation authority. Management's judgment is applied in the interpretation of the relevant tax laws and in the estimation of the provision for current and deferred income taxes, including the expected timing and amount of the realization. A deferred tax asset or liability is determined for each temporary difference based on the tax rates that are expected to be in effect in the period that the asset is realized or the liability is settled. Where the temporary differences will not reverse in the foreseeable future, no deferred tax amount is recognized.

On a quarterly basis, we review whether it is probable that the benefits associated with our deferred tax assets will be realized, using both positive and negative evidence. Refer to Note 24 to our audited 2015 Annual Consolidated Financial Statements for further information.

**Changes in accounting policies and disclosure**
We have adopted new accounting pronouncements effective November 1, 2014. These new and amended standards include, IAS 32 Financial Instruments: Presentations and IFRS Interpretations Committee IFRIC Interpretation 21 Levies. Refer to Note 2 to our audited 2015 Annual Consolidated Financial Statements for details of these changes.

**Future changes in accounting policy and disclosure**

**IFRS 15 *Revenue from Contracts with Customers* (IFRS 15)**
In May 2014, the IASB issued IFRS 15 which establishes principles for reporting about the nature, amount, timing and uncertainty of revenue and cash flows arising from an entity's contracts with customers. The standard provides a single, principles based five-step model for revenue recognition to be applied to contracts with customers except for revenue arising from items such as financial instruments, insurance contracts and leases. In September 2015, the IASB amended IFRS 15 by deferring its effective date by one year. IFRS 15 will be effective for us on November 1, 2018.

**IFRS 9 *Financial Instruments* (IFRS 9)**
In July 2014, the IASB issued the complete version of IFRS 9, which brings together the classification and measurement, impairment and hedge accounting phases of the IASB's project to replace IAS 39 *Financial Instruments: Recognition and Measurement* (IAS 39).

In January 2015, OSFI issued an advisory with respect to the early adoption of IFRS 9 for D-SIBs, requiring D-SIBs to adopt IFRS 9 for the annual period beginning on November 1, 2017. As a result, we will be required to adopt IFRS 9 on November 1, 2017, with the exception of the own credit provisions of IFRS 9, which we adopted in the second quarter of 2014.

**Impairment**
IFRS 9 introduces an expected loss model for all financial assets not classified as or designated as at FVTPL. Allowances are measured according to the model which has three stages: (1) on initial recognition and where there has been no significant increase in credit risk or the resulting credit risk is considered to be low, 12-month expected credit losses are recognized in profit or loss and a loss allowance is established; (2) if credit risk increases significantly since initial recognition, and the resulting credit risk is not considered to be low, full lifetime expected credit losses are recognized; and (3) when a financial asset is considered impaired, interest revenue is calculated based on the carrying amount of the asset, net of the loss allowance, rather than its gross carrying amount.

The assessment of changes in credit risk since initial recognition and the estimation of expected credit losses are required to incorporate all relevant information which is available as at the reporting date. This includes information about past events and current conditions as well as reasonable and supportable forecasts of future events and economic conditions. The estimation of expected credit losses is a discounted probability-weighted estimate.

The recognition and measurement of impairment losses under IFRS 9 is intended to be more forward-looking than under IAS 39 and the resulting provision for credit losses is expected to be more volatile. Because all financial assets within the scope of the IFRS 9 impairment model will be assessed for at least 12-months of expected credit losses, and the population of financial assets to which full lifetime expected credit losses applies is larger than the population of impaired loans for which there is objective evidence of impairment in accordance with IAS 39, the allowance for credit losses is expected to increase.

**Classification and measurement**
IFRS 9 also introduces a principles-based approach to the classification of financial assets based on an entity's business model and the nature of the cash flows of the assets. All financial assets, including hybrid contracts, are measured at FVTPL, fair value through other comprehensive income or amortized cost replacing the existing IAS 39 classifications of held-to-maturity, loans and receivables, and available-for-sale. The combined application of the business model and contractual cash flow characteristics test may result in some differences in the population of financial assets measured at amortized cost or fair value compared with IAS 39. For financial liabilities, IFRS 9 includes the requirements for classification and measurement previously included in IAS 39.

**Hedge accounting**
The new hedge accounting model under IFRS 9 aims to simplify hedge accounting, align the accounting for hedge relationships more closely with an entity's risk management activities and permit hedge accounting to be applied more broadly to a greater variety of hedging instruments and risks eligible for hedge accounting.

The new standard does not explicitly address the accounting for macro hedging activities, which is being addressed by the IASB in a separate project. As a result, IFRS 9 includes an accounting policy choice to retain IAS 39 for hedge accounting requirements until the standard resulting from the IASB's project on macro hedge accounting is effective. The new hedge accounting disclosures, however, are required for the annual period beginning November 1, 2017.

**Transition**
The impairment and classification and measurement requirements of IFRS 9 will be applied retrospectively by adjusting the opening balance sheet at November 1, 2017. There is no requirement to restate comparative periods. Hedge accounting, if adopted, will be applied prospectively, with limited exceptions. At this stage, it is not possible to quantify the potential financial effect of adoption of IFRS 9 to the Bank.

To manage our transition to IFRS 9, we have implemented a comprehensive enterprise-wide program led jointly by Finance and GRM that focuses on key areas of impact including financial reporting, systems and processes, as well as communications and training. We have completed a preliminary organization-wide diagnostic to assess the scope and complexity of the adoption of IFRS 9 which identified areas with differences between IFRS 9 and IAS 39, as discussed above. We will continue to monitor and revisit our preliminary conclusions in order to identify any further financial, capital and business implications.

During 2015, we continued to manage the IFRS 9 program through the completion of activities and deliverables to support the key areas of impact noted above. To date, we have:

- Conducted preliminary assessments of the accounting policy elections for the adoption of IFRS 9;
- Initiated projects within the program framework which are in progress conducting thorough analysis, assessing financial and economic impacts and identifying process and systems requirements to ensure a successful transition;
- Developed a resourcing model and prepared an initial cost analysis and timeline to ensure that sufficient program resources are available to meet key deliverables;
- Provided updates to the Audit Committee and senior management to ensure timely decisions and escalation of key issues and risks; and
- Conducted internal education seminars for key stakeholders across the Bank in the various business platforms and functional groups.

In the upcoming year, we expect to:

- Continue to design specifications for data sourcing, systems, models, controls and processes in order to align finance and risk processes and systems;
- Agree on accounting interpretations and formulate bank-wide policies;
- Continue to roll out training and educational seminars to impacted internal stakeholders;
- Develop and validate new impairment models; and
- Design controls and governance of future processes.

As we prepare for our transition to IFRS 9, we continue to monitor industry interpretations of the new standard and expect to adjust our transition and implementation plans accordingly. Our IFRS 9 program remains aligned to our implementation schedule and we are on track to meet the timelines essential to our transition.

## Future changes in regulatory disclosure

**Basel Committee on Banking Supervision revised Pillar 3 disclosure requirements**
In January 2015, the BCBS issued the final standard for the revised Pillar 3 which requires disclosure of standard templates to provide comparability and consistency of capital and risk disclosure amongst banks. BCBS requires all banks to provide the revised Pillar 3 disclosures by the end of fiscal 2016. The implementation date for Pillar 3 for Canadian banks is expected to be no earlier than the fourth quarter of 2017.

## Controls and procedures

**Disclosure controls and procedures**
Our disclosure controls and procedures are designed to provide reasonable assurance that information required to be disclosed by us in reports filed or submitted under Canadian and U.S. securities laws is recorded, processed, summarized and reported within the time periods specified under those laws and include controls and procedures that are designed to ensure that information is accumulated and communicated to management, including the President and Chief Executive Officer, and the Chief Administrative Officer and Chief Financial Officer, to allow timely decisions regarding required disclosure.

As of October 31, 2015, management evaluated, under the supervision of and with the participation of the President and Chief Executive Officer and the Chief Administrative Officer and Chief Financial Officer, the effectiveness of our disclosure controls and procedures as defined under rules adopted by the United States Securities and Exchange Commission. Based on that evaluation, the President and Chief Executive Officer and the Chief Administrative Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of October 31, 2015.

**Internal control over financial reporting**

Management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP. However, because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements on a timely basis. See Management's Report on Internal Control over Financial Reporting and the Report of Independent Registered Public Accounting Firm.

No changes were made in our internal control over financial reporting during the year ended October 31, 2015 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

## Related party transactions

In the ordinary course of business, we provide normal banking services and operational services, and enter into other transactions with associated and other related corporations, including our joint venture entities, on terms similar to those offered to non-related parties. We grant loans to directors, officers and other employees at rates normally accorded to preferred clients. In addition, we offer deferred share and other plans to non-employee directors, executives and certain other key employees. For further information, refer to Notes 12 and 29 of our audited 2015 Annual Consolidated Financial Statements.

## Net interest income on average assets and liabilities

Table 78

| (Millions of Canadian dollars, except for percentage amounts) | Average balances | | | Interest | | | Average rate | | |
|---|---|---|---|---|---|---|---|---|---|
| | **2015** | 2014 | 2013 | **2015** | 2014 | 2013 | **2015** | 2014 | 2013 |
| **Assets** | | | | | | | | | |
| **Deposits with other banks** (3) | | | | | | | | | |
| Canada | **$ 8,463** | $ 1,692 | $ 1,355 | **$ 70** | $ 61 | $ 57 | **0.83%** | 3.61% | 4.21% |
| U.S. | **5,567** | 540 | 426 | **12** | 1 | 4 | **0.22** | 0.19 | 0.94 |
| Other International | **14,837** | 5,227 | 7,370 | **(5)** | 14 | 13 | **(0.03)** | 0.27 | 0.18 |
| | **28,867** | 7,459 | 9,151 | **77** | 76 | 74 | **0.27%** | 1.02% | 0.81% |
| **Securities** | | | | | | | | | |
| Trading | **164,509** | 149,920 | 137,064 | **3,543** | 3,322 | 3,113 | **2.15** | 2.22 | 2.27 |
| Available-for-sale | **52,833** | 43,047 | 37,809 | **976** | 671 | 666 | **1.85** | 1.56 | 1.76 |
| | **217,342** | 192,967 | 174,873 | **4,519** | 3,993 | 3,779 | **2.08** | 2.07 | 2.16 |
| **Asset purchased under reverse repurchase agreements and securities borrowed** | **165,602** | 136,857 | 123,766 | **1,251** | 971 | 941 | **0.76** | 0.71 | 0.76 |
| **Loans** (2) | | | | | | | | | |
| Canada | | | | | | | | | |
| Retail | **326,153** | 314,159 | 301,887 | **12,086** | 12,245 | 12,077 | **3.71** | 3.90 | 4.00 |
| Wholesale | **58,946** | 54,681 | 50,248 | **2,715** | 2,721 | 2,486 | **4.61** | 4.98 | 4.95 |
| | **385,099** | 368,840 | 352,135 | **14,801** | 14,966 | 14,563 | **3.84** | 4.06 | 4.14 |
| U.S. | **36,581** | 28,402 | 22,691 | **780** | 888 | 776 | **2.13** | 3.13 | 3.42 |
| Other International | **31,261** | 25,067 | 21,129 | **1,301** | 1,125 | 1,015 | **4.16** | 4.49 | 4.80 |
| | **452,941** | 422,309 | 395,955 | **16,882** | 16,979 | 16,354 | **3.73** | 4.02 | 4.13 |
| **Total interest-earning assets** | **864,752** | 759,592 | 703,745 | **22,729** | 22,019 | 21,148 | **2.63** | 2.90 | 3.01 |
| **Non-interest-bearing deposits with other banks** | **19,283** | 13,495 | 11,511 | **–** | – | – | **–** | – | – |
| **Customers' liability under acceptances** | **12,423** | 10,725 | 9,663 | **–** | – | – | **–** | – | – |
| **Other assets** (3) | **156,342** | 122,688 | 127,081 | **–** | – | – | **–** | – | – |
| **Total assets** | **$ 1,052,800** | $ 906,500 | $ 852,000 | **$ 22,729** | $ 22,019 | $ 21,148 | **2.16%** | 2.43% | 2.48% |
| **Liabilities and shareholders' equity** | | | | | | | | | |
| **Deposits** (4) | | | | | | | | | |
| Canada (1) | **459,679** | 418,780 | 379,080 | **5,162** | 5,416 | 5,242 | **1.12%** | 1.29% | 1.38% |
| U.S. | **68,909** | 50,459 | 43,076 | **214** | 158 | 169 | **0.31** | 0.31 | 0.39 |
| Other International | **62,029** | 54,267 | 48,953 | **347** | 299 | 283 | **0.56** | 0.55 | 0.58 |
| | **590,617** | 523,506 | 471,109 | **5,723** | 5,873 | 5,694 | **0.97** | 1.12 | 1.21 |
| **Obligations related to securities sold short** | **56,827** | 50,548 | 48,979 | **1,645** | 1,494 | 1,579 | **2.89** | 2.96 | 3.22 |
| **Obligations related to assets sold under repurchase agreements and securities loaned** | **84,380** | 68,594 | 70,881 | **337** | 278 | 279 | **0.40** | 0.41 | 0.39 |
| **Subordinated debentures** | **7,654** | 6,632 | 8,216 | **240** | 246 | 336 | **3.14** | 3.71 | 4.09 |
| **Other interest-bearing liabilities** (3) | **13,585** | 251 | 484 | **13** | 12 | 11 | **0.10** | 4.78 | 2.27 |
| **Total interest-bearing liabilities** | **753,063** | 649,531 | 599,669 | **7,958** | 7,903 | 7,899 | **1.06** | 1.22 | 1.32 |
| **Non-interest-bearing deposits** (1) | **76,830** | 69,596 | 66,607 | **–** | – | – | **–** | – | – |
| **Acceptances** | **12,422** | 10,725 | 9,663 | **–** | – | – | **–** | – | – |
| **Other liabilities** (3) | **151,845** | 124,643 | 129,118 | **–** | – | – | **–** | – | – |
| **Total liabilities** | **$ 994,160** | $ 854,495 | $ 805,057 | **$ 7,958** | $ 7,903 | $ 7,899 | **0.80%** | 0.92% | 0.98% |
| **Equity** | **58,640** | 52,005 | 46,943 | **n.a.** | n.a. | n.a. | **n.a.** | n.a. | n.a. |
| **Total liabilities and shareholders' equity** | **$ 1,052,800** | $ 906,500 | $ 852,000 | **$ 7,958** | $ 7,903 | $ 7,899 | **0.76%** | 0.87% | 0.93% |
| **Net interest income and margin** | **$ 1,052,800** | $ 906,500 | $ 852,000 | **$ 14,771** | $ 14,116 | $ 13,249 | **1.40%** | 1.56% | 1.56% |
| **Net interest income and margin (average earning assets)** | | | | | | | | | |
| Canada | **$ 539,333** | $ 497,436 | $ 471,448 | **$ 11,538** | $ 11,121 | $ 10,956 | **2.14%** | 2.24% | 2.32% |
| U.S. | **165,083** | 135,876 | 116,016 | **1,977** | 1,896 | 1,603 | **1.20** | 1.40 | 1.38 |
| Other International | **160,336** | 126,280 | 116,281 | **1,256** | 1,099 | 690 | **0.78** | 0.87 | 0.59 |
| **Total** | **$ 864,752** | $ 759,592 | $ 703,745 | **$ 14,771** | $ 14,116 | $ 13,249 | **1.71%** | 1.86% | 1.88% |

(1) Amounts have been revised from those previously presented.
(2) Interest income includes loan fees of $503 million (2014 – $516 million; 2013 – $509 million).
(3) Starting in 2015, we have included cash collateral and margin deposits, and cash collateral received in Deposits with other banks and Other interest-bearing liabilities, respectively (previously, in Other assets and Other liabilities). Insurance segment assets and liabilities are included in Other assets and Other liabilities, respectively.
(4) Deposits include personal savings deposits with average balances of $142 billion (2014 – $133 billion; 2013 – $124 billion), interest expense of $.6 billion (2014 – $.7 billion; 2013 – $.7 billion) and average rates of .4% (2014 – .5%; 2013 – .6%). Deposits also include term deposits with average balances of $345 billion (2014 – $302 billion; 2013 – $273 billion), interest expense of $4.5 billion (2014 – $4.4 billion; 2013 – $4.3 billion) and average rates of 1.30% (2014 – 1.47%; 2013 – 1.57%).

**Change in net interest income** **Table 79**

| (Millions of Canadian dollars) | **2015** (3) **vs. 2014** Increase (decrease) due to changes in **Average volume** (1) | **Average rate** (1) | **Net change** | 2014 vs. 2013 Increase (decrease) due to changes in Average volume (1) | Average rate (1) | Net change |
|---|---|---|---|---|---|---|
| **Assets** | | | | | | |
| **Deposits with other banks** (2) | | | | | | |
| Canada (4) | **$ 244** | **$ (235)** | **$ 9** | $ 14 | $ (10) | $ 4 |
| U.S. (4) | **9** | **2** | **11** | 1 | (4) | (3) |
| Other international (4) | **26** | **(45)** | **(19)** | (4) | 5 | 1 |
| **Securities** | | | | | | |
| Trading | **323** | **(102)** | **221** | 292 | (83) | 209 |
| Available-for-sale | **153** | **152** | **305** | 92 | (87) | 5 |
| **Asset purchased under reverse repurchase agreements and securities borrowed** | **204** | **76** | **280** | 100 | (70) | 30 |
| **Loans** | | | | | | |
| Canada | | | | | | |
| Retail | **467** | **(626)** | **(159)** | 491 | (323) | 168 |
| Wholesale | **212** | **(218)** | **(6)** | 219 | 16 | 235 |
| U.S. | **256** | **(364)** | **(108)** | 195 | (83) | 112 |
| Other international | **278** | **(102)** | **176** | 189 | (79) | 110 |
| **Total interest income** | **$ 2,172** | **$ (1,462)** | **$ 710** | $ 1,589 | $ (718) | $ 871 |
| **Liabilities** | | | | | | |
| **Deposits** | | | | | | |
| Canada (5) | **529** | **(783)** | **(254)** | 549 | (375) | 174 |
| U.S. | **58** | **(2)** | **56** | 29 | (40) | (11) |
| Other international | **43** | **5** | **48** | 31 | (15) | 16 |
| **Obligations related to securities sold short** | **186** | **(35)** | **151** | 51 | (136) | (85) |
| **Obligations related to assets sold under repurchase agreements and securities loaned** | **64** | **(5)** | **59** | (9) | 8 | (1) |
| **Subordinated debentures** | **38** | **(44)** | **(6)** | (65) | (25) | (90) |
| **Other interest-bearing liabilities** (2) | **637** | **(636)** | **1** | (5) | 6 | 1 |
| **Total interest expense** | **$ 1,555** | **$ (1,500)** | **$ 55** | $ 581 | $ (577) | $ 4 |
| **Net interest income** | **$ 617** | **$ 38** | **$ 655** | $ 1,008 | $ (141) | $ 867 |

(1) Volume/rate variance is allocated on the percentage relationships of changes in balances and changes in rates to the total net change in net interest income.
(2) Starting in 2015, we have included cash collateral and margin deposits, and cash collateral received in Deposits with other banks and Other interest-bearing liabilities, respectively (previously, in Other assets and Other liabilities).
(3) Insurance segment assets and liabilities are included in Other assets and Other liabilities, respectively.
(4) Geographic classification for selected assets and liabilities is based on the domicile of the booking point of the subject assets and liabilities.
(5) Amounts have been revised from those previously presented.

**Loans and acceptances by geography** — Table 80

| As at October 31 (Millions of Canadian dollars) | 2015 | 2014 | 2013 | 2012 (1) | 2011 (1) |
|---|---|---|---|---|---|
| **Canada** | | | | | |
| Residential mortgages | **$ 229,987** | $ 215,624 | $ 206,134 | $ 195,552 | $ 185,620 |
| Personal | **84,637** | 86,984 | 86,102 | 80,000 | 75,668 |
| Credit cards | **15,516** | 14,650 | 13,902 | 13,422 | 12,723 |
| Small business | **4,003** | 4,067 | 4,026 | 2,503 | 2,481 |
| Retail | **334,143** | 321,325 | 310,164 | 291,477 | 276,492 |
| Business | **71,246** | 64,643 | 58,920 | 51,212 | 45,186 |
| Sovereign (2) | **8,508** | 3,840 | 3,807 | 3,751 | 3,304 |
| Bank | **530** | 413 | 823 | 390 | 747 |
| Wholesale | **$ 80,284** | $ 68,896 | $ 63,550 | $ 55,353 | $ 49,237 |
| | **$ 414,427** | $ 390,221 | $ 373,714 | $ 346,830 | $ 325,729 |
| **U.S.** | | | | | |
| Retail | **5,484** | 4,686 | 3,734 | 3,138 | 3,101 |
| Wholesale | **34,702** | 23,639 | 19,443 | 17,081 | 11,094 |
| | **40,186** | 28,325 | 23,177 | 20,219 | 14,195 |
| **Other International** | | | | | |
| Retail | **8,556** | 8,258 | 6,768 | 5,673 | 5,152 |
| Wholesale | **24,536** | 21,881 | 17,103 | 16,900 | 12,110 |
| | **33,092** | 30,139 | 23,871 | 22,573 | 17,262 |
| **Total loans and acceptances** | **$ 487,705** | $ 448,685 | $ 420,762 | $ 389,622 | $ 357,186 |
| **Total allowance for loan losses** | **(2,029)** | (1,994) | (1,959) | (1,996) | (1,967) |
| **Total loans and acceptances, net of allowance for loan losses** | **$ 485,676** | $ 446,691 | $ 418,803 | $ 387,626 | $ 355,219 |

(1) On a continuing operations basis.
(2) In 2015, we reclassified $4 billion from AFS securities to Loans.

**Loans and acceptances by portfolio and sector** — Table 81

| As at October 31 (Millions of Canadian dollars) | 2015 | 2014 | 2013 | 2012 (1) | 2011 (1) |
|---|---|---|---|---|---|
| Residential mortgages | **$ 233,975** | $ 219,257 | $ 209,238 | $ 198,324 | $ 188,406 |
| Personal | **94,346** | 96,021 | 93,260 | 85,800 | 80,921 |
| Credit cards | **15,859** | 14,924 | 14,142 | 13,661 | 12,937 |
| Small business | **4,003** | 4,067 | 4,026 | 2,503 | 2,481 |
| **Retail** | **$ 348,183** | $ 334,269 | $ 320,666 | $ 300,288 | $ 284,745 |
| Business | | | | | |
| Agriculture | **6,057** | 5,694 | 5,441 | 5,202 | 4,880 |
| Automotive | **6,614** | 6,209 | 6,167 | 3,585 | 3,025 |
| Consumer goods | **7,146** | 7,172 | 6,230 | 5,432 | 5,341 |
| Energy | | | | | |
| Oil & gas | **7,691** | 5,849 | 5,046 | 4,981 | 4,119 |
| Utilities | **5,162** | 3,766 | 3,860 | 3,821 | 2,275 |
| Non-bank financial services | **6,428** | 5,688 | 4,903 | 3,895 | 2,007 |
| Forest products | **1,169** | 979 | 893 | 811 | 698 |
| Industrial products | **4,725** | 4,665 | 4,038 | 3,938 | 3,381 |
| Mining & metals | **1,402** | 1,320 | 1,074 | 965 | 1,122 |
| Real estate & related | **33,802** | 30,387 | 24,413 | 20,650 | 15,569 |
| Technology & media | **6,599** | 4,822 | 4,006 | 4,203 | 2,712 |
| Transportation & environment | **5,907** | 5,432 | 5,593 | 5,221 | 4,927 |
| Other (2) | **35,133** | 26,604 | 22,716 | 21,447 | 17,011 |
| Sovereign | **9,887** | 4,628 | 4,396 | 4,193 | 4,050 |
| Bank | **1,800** | 1,201 | 1,320 | 990 | 1,324 |
| **Wholesale** | **$ 139,522** | $ 114,416 | $ 100,096 | $ 89,334 | $ 72,441 |
| **Total loans and acceptances** | **$ 487,705** | $ 448,685 | $ 420,762 | $ 389,622 | $ 357,186 |
| **Total allowance for loan losses** | **(2,029)** | (1,994) | (1,959) | (1,996) | (1,967) |
| **Total loans and acceptances, net of allowance for loan losses** | **$ 485,676** | $ 446,691 | $ 418,803 | $ 387,626 | $ 355,219 |

(1) On a continuing operations basis.
(2) Other in 2015 related to financing products, $10.1 billion; health, $6.0 billion; holding and investments, $6.9 billion; other services, $8.8 billion; and other, $3.3 billion.

| Impaired loans by portfolio and geography | | | | | Table 82 |
|---|---|---|---|---|---|
| As at October 31 (Millions of Canadian dollars, except for percentage amounts) | **2015** | 2014 | 2013 | 2012 (1) | 2011 (1) |
| Residential mortgages | **$ 646** | $ 678 | $ 691 | $ 674 | $ 719 |
| Personal | **299** | 300 | 363 | 273 | 289 |
| Small business | **45** | 47 | 37 | 33 | 40 |
| **Retail** | **990** | 1,025 | 1,091 | 980 | 1,048 |
| Business | | | | | |
| Agriculture | **$ 41** | $ 40 | $ 43 | $ 52 | $ 75 |
| Automotive | **11** | 12 | 12 | 17 | 38 |
| Consumer goods | **130** | 108 | 101 | 83 | 91 |
| Energy | | | | | |
| Oil and gas | **156** | 6 | 14 | 2 | 33 |
| Utilities | **57** | – | – | – | – |
| Non-bank financial services | **1** | 3 | 1 | 5 | 13 |
| Forest products | **28** | 25 | 26 | 30 | 27 |
| Industrial products | **45** | 48 | 54 | 88 | 38 |
| Mining & metals | **17** | 9 | 2 | 2 | 4 |
| Real estate & related | **297** | 314 | 367 | 353 | 464 |
| Technology & media | **34** | 38 | 117 | 251 | 47 |
| Transportation & environment | **53** | 32 | 98 | 73 | 105 |
| Other (2) | **423** | 315 | 272 | 312 | 311 |
| Sovereign | **–** | – | – | – | – |
| Bank | **2** | 2 | 3 | 2 | 33 |
| **Wholesale** | **1,295** | 952 | 1,110 | 1,270 | 1,279 |
| **Total impaired loans** (3) | **$ 2,285** | $ 1,977 | $ 2,201 | $ 2,250 | $ 2,327 |
| **Canada** | | | | | |
| Residential mortgages | **$ 356** | $ 388 | $ 464 | $ 475 | $ 567 |
| Personal | **223** | 224 | 229 | 206 | 188 |
| Small business | **45** | 47 | 36 | 34 | 40 |
| Retail | **624** | 659 | 729 | 715 | 795 |
| Business | | | | | |
| Agriculture | **39** | 36 | 38 | 44 | 62 |
| Automotive | **8** | 11 | 9 | 11 | 30 |
| Consumer goods | **65** | 70 | 58 | 34 | 48 |
| Energy | | | | | |
| Oil & gas | **39** | 4 | 14 | – | 25 |
| Utilities | **20** | – | – | – | – |
| Non-bank financial services | **–** | 1 | 1 | 3 | 1 |
| Forest products | **5** | 6 | 8 | 12 | 7 |
| Industrial products | **39** | 41 | 40 | 34 | 26 |
| Mining & metals | **7** | 9 | 2 | 2 | 2 |
| Real estate & related | **161** | 171 | 169 | 153 | 164 |
| Technology & media | **34** | 37 | 86 | 238 | 43 |
| Transportation & environment | **29** | 11 | 21 | 22 | 12 |
| Other | **66** | 90 | 80 | 88 | 93 |
| Sovereign | **–** | – | – | – | – |
| Bank | **–** | – | – | – | – |
| Wholesale | **512** | 487 | 526 | 641 | 513 |
| Total | **$ 1,136** | $ 1,146 | $ 1,255 | $ 1,356 | $ 1,308 |
| **U.S.** | | | | | |
| Retail | **$ 10** | $ 13 | $ 14 | $ 7 | $ 6 |
| Wholesale | **204** | 18 | 98 | 162 | 116 |
| Total | **$ 214** | $ 31 | $ 112 | $ 169 | $ 122 |
| **Other International** | | | | | |
| Retail | **$ 356** | $ 353 | $ 348 | $ 258 | $ 247 |
| Wholesale | **579** | 447 | 486 | 467 | 650 |
| Total | **$ 935** | $ 800 | $ 834 | $ 725 | $ 897 |
| **Total impaired loans** | **$ 2,285** | $ 1,977 | $ 2,201 | $ 2,250 | $ 2,327 |
| Allowance for impaired loans | **(654)** | (632) | (599) | (636) | (605) |
| **Net impaired loans** | **$ 1,631** | $ 1,345 | $ 1,602 | $ 1,614 | $ 1,722 |
| **Gross impaired loans as a % of loans and acceptances** | | | | | |
| Residential mortgages | **0.28%** | 0.31% | 0.33% | 0.34% | 0.38% |
| Personal | **0.32%** | 0.31% | 0.39% | 0.32% | 0.36% |
| Small business | **1.13%** | 1.16% | 0.83% | 1.32% | 1.61% |
| **Retail** | **0.28%** | 0.31% | 0.34% | 0.33% | 0.37% |
| **Wholesale** | **0.93%** | 0.84% | 1.11% | 1.42% | 1.77% |
| **Total** | **0.47%** | 0.44% | 0.52% | 0.58% | 0.65% |
| **Allowance for impaired loans as a % of gross impaired loans** | **28.64%** | 31.98% | 27.22% | 28.33% | 26.00% |

(1) On a continuing operations basis.
(2) Other in 2015 is related to financing products, $109 million; health, $17 million; holding and investments, $185 million; other services, $69 million; and other, $43 million.
(3) Past due loans greater than 90 days not included in impaired loans were $314 million in 2015 (2014 – $316 million; 2013 – $346 million; 2012 – $393 million; 2011 – $525 million).

**Provision for credit losses by portfolio and geography** **Table 83**

| (Millions of Canadian dollars, except for percentage amounts) | 2015 | 2014 | 2013 | 2012 (1) | 2011 (1) |
|---|---|---|---|---|---|
| Residential mortgages | **$ 47** | $ 94 | $ 41 | $ 67 | $ 42 |
| Personal | **388** | 441 | 458 | 445 | 438 |
| Credit cards | **378** | 353 | 354 | 394 | 448 |
| Small business | **32** | 44 | 32 | 43 | 35 |
| **Retail** | **$ 845** | $ 932 | $ 885 | $ 949 | $ 963 |
| Business | | | | | |
| Agriculture | **$ 9** | $ 3 | $ 4 | $ 8 | $ 7 |
| Automotive | **3** | 2 | 3 | (2) | (4) |
| Consumer goods | **33** | 27 | 17 | 27 | 14 |
| Energy | | | | | |
| Oil and gas | **47** | (5) | (6) | (11) | (20) |
| Utilities | **9** | 32 | – | – | – |
| Non-bank financial services | **7** | – | 10 | 1 | (11) |
| Forest products | **6** | 7 | 4 | 5 | 5 |
| Industrial products | **4** | 14 | 21 | 32 | 3 |
| Mining & metals | **8** | 2 | 1 | – | – |
| Real estate & related | **29** | 58 | 62 | 82 | 66 |
| Technology & media | **5** | 14 | 157 | 102 | (3) |
| Transportation & environment | **8** | 2 | 35 | 47 | 29 |
| Other (2) | **85** | 76 | 44 | 61 | 82 |
| Sovereign | **–** | – | – | – | – |
| Bank | **(1)** | – | – | – | – |
| **Wholesale** | **$ 252** | $ 232 | $ 352 | $ 352 | $ 168 |
| **Total provision for credit losses on impaired loans** | **$ 1,097** | $ 1,164 | $ 1,237 | $ 1,301 | $ 1,131 |
| **Canada** | | | | | |
| Residential mortgages | **$ 27** | $ 27 | $ 27 | $ 34 | $ 25 |
| Personal | **393** | 393 | 391 | 413 | 408 |
| Credit cards | **371** | 345 | 346 | 391 | 448 |
| Small business | **32** | 44 | 32 | 43 | 35 |
| Retail | **$ 823** | $ 809 | $ 796 | $ 881 | $ 916 |
| Business | | | | | |
| Agriculture | **9** | 4 | 4 | 8 | 7 |
| Automotive | **3** | 3 | 3 | (2) | (3) |
| Consumer goods | **21** | 25 | 16 | 13 | 13 |
| Energy | | | | | |
| Oil & gas | **22** | (5) | (6) | (11) | (9) |
| Utilities | **1** | – | – | – | – |
| Non-bank financial services | **–** | – | – | 1 | – |
| Forest products | **1** | 1 | 3 | 5 | 4 |
| Industrial products | **7** | 14 | 14 | 12 | 3 |
| Mining & metals | **3** | 2 | 1 | – | 1 |
| Real estate & related | **13** | 34 | 37 | 43 | 31 |
| Technology & media | **6** | 14 | 50 | 98 | 6 |
| Transportation & environment | **7** | 3 | 2 | 10 | 5 |
| Other | **23** | 28 | 25 | 30 | 44 |
| Sovereign | **–** | – | – | – | – |
| Bank | **–** | – | – | – | – |
| Wholesale | **$ 116** | $ 123 | $ 149 | $ 207 | $ 102 |
| Total | **$ 939** | $ 932 | $ 945 | $ 1,088 | $ 1,018 |
| **U.S.** | | | | | |
| Retail | **1** | 2 | 3 | 4 | 4 |
| Wholesale | **40** | 40 | 32 | 29 | (19) |
| | **$ 41** | $ 42 | $ 35 | $ 33 | $ (15) |
| **Other International** | | | | | |
| Retail | **21** | 121 | 86 | 64 | 43 |
| Wholesale | **96** | 69 | 171 | 116 | 85 |
| | **$ 117** | $ 190 | $ 257 | $ 180 | $ 128 |
| **Total provision for credit losses on impaired loans** | **$ 1,097** | $ 1,164 | $ 1,237 | $ 1,301 | $ 1,131 |
| **Total provision for credit losses on non-impaired loans** | **–** | – | – | (2) | 2 |
| **Total provision for credit losses** | **$ 1,097** | $ 1,164 | $ 1,237 | $ 1,299 | $ 1,133 |
| **Provision for credit losses as a % of average net loans and acceptances** | **0.24%** | 0.27% | 0.31% | 0.35% | 0.33% |

(1) On a continuing operations basis.
(2) Other in 2015 is related to financing products, $39 million; holding and investments, $19 million; other services, $4 million; and other, $23 million.

**Allowance for credit losses by portfolio and geography** — Table 84

| (Millions of Canadian dollars, except percentage amounts) | 2015 | 2014 | 2013 | 2012 (1), (2) | 2011 (2) |
|---|---|---|---|---|---|
| **Allowance at beginning of year** | **$ 2,085** | $ 2,050 | $ 2,087 | $ 2,056 | $ 2,966 |
| **Alowance at beginning of year – discontinued operations** | **–** | – | – | – | (854) |
| **Provision for credit losses** | **1,097** | 1,164 | 1,237 | 1,299 | 1,133 |
| **Write-offs by portfolio** | | | | | |
| Residential mortgages | **(64)** | (30) | (24) | (32) | (16) |
| Personal | **(494)** | (565) | (498) | (499) | (515) |
| Credit cards | **(497)** | (466) | (466) | (496) | (545) |
| Small business | **(40)** | (47) | (35) | (50) | (45) |
| **Retail** | **$ (1,095)** | $ (1,108) | $ (1,023) | $ (1,077) | $ (1,121) |
| Business | **$ (243)** | $ (221) | $ (448) | $ (288) | $ (226) |
| Sovereign | **–** | – | – | – | (9) |
| Bank | **–** | – | – | (32) | – |
| **Wholesale** | **$ (243)** | $ (221) | $ (448) | $ (320) | $ (235) |
| **Total write-offs by portfolio** | **$ (1,338)** | $ (1,329) | $ (1,471) | $ (1,397) | $ (1,356) |
| **Recoveries by portfolio** | | | | | |
| Residential mortgages | **$ 7** | $ 2 | $ 2 | $ 1 | $ 1 |
| Personal | **105** | 106 | 96 | 83 | 79 |
| Credit cards | **119** | 114 | 112 | 102 | 97 |
| Small business | **10** | 9 | 9 | 8 | 7 |
| **Retail** | **$ 241** | $ 231 | $ 219 | $ 194 | $ 184 |
| Business | **$ 33** | $ 32 | $ 51 | $ 39 | $ 60 |
| Sovereign | **–** | – | – | – | – |
| Bank | **1** | – | – | – | – |
| **Wholesale** | **$ 34** | $ 32 | $ 51 | $ 39 | $ 60 |
| **Total recoveries by portfolio** | **$ 275** | $ 263 | $ 270 | $ 233 | $ 244 |
| **Net write-offs** | **$ (1,063)** | $ (1,066) | $ (1,201) | $ (1,164) | $ (1,112) |
| Adjustments (3) | **1** | (63) | (73) | (104) | (75) |
| **Total allowance for credit losses at end of year** | **$ 2,120** | $ 2,085 | $ 2,050 | $ 2,087 | $ 2,058 |
| **Allowance against impaired loans** | | | | | |
| **Canada** | | | | | |
| Residential mortgages | **$ 27** | $ 31 | $ 36 | $ 41 | $ 47 |
| Personal | **96** | 93 | 97 | 89 | 88 |
| Small business | **19** | 19 | 16 | 12 | 15 |
| **Retail** | **$ 142** | $ 143 | $ 149 | $ 142 | $ 150 |
| Business | | | | | |
| Agriculture | **$ 5** | $ 6 | $ 6 | $ 9 | $ 13 |
| Automotive | **4** | 4 | 4 | 7 | 15 |
| Consumer goods | **12** | 22 | 15 | 14 | 17 |
| Energy | | | | | |
| Oil & gas | **–** | – | 1 | 1 | 3 |
| Utilities | **1** | – | – | – | – |
| Non-bank financial services | **–** | – | – | – | – |
| Forest products | **3** | 3 | 4 | 6 | 3 |
| Industrial products | **13** | 18 | 15 | 10 | 12 |
| Mining & metals | **1** | 1 | 1 | 1 | 1 |
| Real estate & related | **28** | 48 | 42 | 45 | 47 |
| Technology & media | **12** | 17 | 46 | 107 | 20 |
| Transportation & environment | **7** | 5 | 6 | 8 | 5 |
| Other | **25** | 36 | 30 | 31 | 43 |
| Sovereign | **–** | – | – | – | – |
| Bank | **–** | – | – | – | – |
| **Wholesale** | **$ 111** | $ 160 | $ 170 | $ 239 | $ 179 |
| | **$ 253** | $ 303 | $ 319 | $ 381 | $ 329 |
| **U.S.** | | | | | |
| Retail | **$ 1** | $ 1 | $ 2 | $ 1 | $ 1 |
| Wholesale | **47** | 16 | 19 | 38 | 25 |
| | **$ 48** | $ 17 | $ 21 | $ 39 | $ 26 |
| **Other International** | | | | | |
| Retail | **$ 169** | $ 172 | $ 146 | $ 96 | $ 80 |
| Wholesale | **184** | 140 | 113 | 120 | 170 |
| | **$ 353** | $ 312 | $ 259 | $ 216 | $ 250 |
| **Total allowance against impaired loans** | **$ 654** | $ 632 | $ 599 | $ 636 | $ 605 |
| **Allowance against non-impaired loans** | | | | | |
| Residential mortgages | **$ 83** | $ 78 | $ 48 | $ 48 | $ 41 |
| Personal | **396** | 400 | 405 | 392 | 412 |
| Credit cards | **386** | 385 | 385 | 403 | 415 |
| Small business | **45** | 45 | 45 | 60 | 60 |
| Retail | **$ 910** | $ 908 | $ 883 | $ 903 | $ 928 |
| **Wholesale** | **$ 465** | $ 454 | $ 477 | $ 457 | $ 434 |
| **Off-balance sheet and other items** | **$ 91** | $ 91 | $ 91 | $ 91 | $ 91 |
| **Total allowance against non-impaired loans** | **$ 1,466** | $ 1,453 | $ 1,451 | $ 1,451 | $ 1,453 |
| **Total allowance for credit losses** | **$ 2,120** | $ 2,085 | $ 2,050 | $ 2,087 | $ 2,058 |
| **Key ratios** | | | | | |
| Allowance for credit losses as a % of loans and acceptances | **0.43%** | 0.46% | 0.49% | 0.54% | 0.57% |
| Net write-offs as a % of average net loans and acceptances | **0.23%** | 0.25% | 0.30% | 0.31% | 0.33% |

(1) On a continuing operations basis.
(2) Opening allowance for credit losses as at November 1, 2011 has been restated due to the implementation of amendments to IFRS 11.
(3) Under IFRS, other adjustments include $80 million of unwind of discount and $(81) million of changes in exchange rate (2014 – $87 million and $(24) million; 2013 – $86 million and $(13) million). For further details, refer to Note 5 of our audited 2015 Annual Consolidated Financial Statements.

| Credit quality information by Canadian province | | | | | Table 85 |
|---|---|---|---|---|---|
| (Millions of Canadian dollars) | **2015** | 2014 | 2013 | 2012 (1) | 2011 (1) |
| **Loans and acceptances** | | | | | |
| Atlantic provinces (2) | **$ 23,040** | $ 22,130 | $ 21,263 | $ 19,953 | $ 18,481 |
| Quebec | **51,197** | 50,748 | 48,060 | 42,920 | 38,776 |
| Ontario | **175,315** | 159,817 | 152,258 | 141,566 | 141,230 |
| Prairie provinces (3) | **94,392** | 88,538 | 84,015 | 77,187 | 68,468 |
| B.C. and territories (4) | **70,483** | 68,988 | 68,118 | 65,204 | 58,774 |
| **Total loans and acceptances in Canada** | **$ 414,427** | $ 390,221 | $ 373,714 | $ 346,830 | $ 325,729 |
| **Gross impaired loans** | | | | | |
| Atlantic provinces (2) | **$ 93** | $ 81 | $ 83 | $ 67 | $ 66 |
| Quebec | **213** | 205 | 177 | 180 | 135 |
| Ontario | **341** | 391 | 424 | 502 | 398 |
| Prairie provinces (3) | **339** | 258 | 330 | 338 | 404 |
| B.C. and territories (4) | **150** | 211 | 241 | 269 | 305 |
| **Total gross impaired loans in Canada** | **$ 1,136** | $ 1,146 | $ 1,255 | $ 1,356 | $ 1,308 |
| **Provision for credit losses on impaired loans** | | | | | |
| Atlantic provinces (2) | **$ 57** | $ 51 | $ 50 | $ 62 | $ 54 |
| Quebec | **96** | 92 | 78 | 96 | 63 |
| Ontario | **590** | 588 | 605 | 704 | 686 |
| Prairie provinces (3) | **129** | 111 | 113 | 120 | 107 |
| B.C. and territories (4) | **67** | 90 | 99 | 106 | 108 |
| **Total provision for credit losses on impaired loans in Canada** | **$ 939** | $ 932 | $ 945 | $ 1,088 | $ 1,018 |

(1) On a continuing operations basis.
(2) Comprises Newfoundland and Labrador, Prince Edward Island, Nova Scotia and New Brunswick.
(3) Comprises Manitoba, Saskatchewan and Alberta.
(4) Comprises British Columbia, Nunavut, Northwest Territories and Yukon.

## EDTF recommendations index

On October 29, 2012, the Enhanced Disclosure Task Force (EDTF), established by the Financial Stability Board, issued its report Enhancing the Risk Disclosures of Banks, which included 32 recommendations aimed at achieving transparent, high-quality risk disclosures. As a result, our enhanced disclosures have been provided in our 2015 Annual Report and Supplementary Financial Information package (SFI).

The following index summarizes our disclosure by EDTF recommendation:

| | | | Location of disclosure | |
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## Management's responsibility for financial reporting

The accompanying consolidated financial statements of Royal Bank of Canada were prepared by management, which is responsible for the integrity and fairness of the information presented, including the many amounts that must of necessity be based on estimates and judgments. These consolidated financial statements were prepared in accordance with the *Bank Act* (Canada) and International Financial Reporting Standards as issued by the International Accounting Standards Board. Financial information appearing throughout our Management's Discussion and Analysis is consistent with these consolidated financial statements.

Our internal controls are designed to provide reasonable assurance that transactions are authorized, assets are safeguarded and proper records are maintained. These controls include quality standards in hiring and training of employees, policies and procedures manuals, a corporate code of conduct and accountability for performance within appropriate and well-defined areas of responsibility.

The system of internal controls is further supported by a compliance function, which is designed to ensure that we and our employees comply with securities legislation and conflict of interest rules, and by an internal audit staff, which conducts periodic audits of all aspects of our operations.

The Board of Directors oversees management's responsibilities for financial reporting through an Audit Committee, which is composed entirely of independent directors. This Committee reviews our consolidated financial statements and recommends them to the Board for approval. Other key responsibilities of the Audit Committee include reviewing our existing internal control procedures and planned revisions to those procedures, and advising the directors on auditing matters and financial reporting issues. Our Chief Compliance Officer and Chief Internal Auditor have full and unrestricted access to the Audit Committee.

The Office of the Superintendent of Financial Institutions Canada (OSFI) examines and inquires into our business and affairs as deemed necessary to determine whether the provisions of the *Bank Act* are being complied with, and that we are in sound financial condition. In carrying out its mandate, OSFI strives to protect the rights and interests of our depositors and creditors.

Deloitte LLP, Independent Registered Public Accounting Firm appointed by our shareholders upon the recommendation of the Audit Committee and Board, have performed an independent audit of the consolidated financial statements and their report follows. The auditors have full and unrestricted access to the Audit Committee to discuss their audit and related findings.

David I. McKay
President and Chief Executive Officer

Janice R. Fukakusa
Chief Administrative Officer and Chief Financial Officer

Toronto, December 1, 2015

## Report of Independent Registered Public Accounting Firm

To the Shareholders of Royal Bank of Canada

We have audited the accompanying consolidated financial statements of Royal Bank of Canada and subsidiaries (the "Bank"), which comprise the consolidated balance sheets as at October 31, 2015 and October 31, 2014, and the consolidated statements of income, statements of comprehensive income, statements of changes in equity, and statements of cash flows for each of the years in the three-year period ended October 31, 2015, and 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.

**Auditor's 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 the auditor's 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, the auditor considers internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances. An audit also includes evaluating the appropriateness of accounting policies 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 balance sheets of Royal Bank of Canada and subsidiaries as at October 31, 2015 and October 31, 2014, and their financial performance and cash flows for each of the years in the three-year period ended October 31, 2015 in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board.

**Other Matter**
We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Bank's internal control over financial reporting as of October 31, 2015 based on the criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated December 1, 2015 expressed an unqualified opinion on the Bank's internal control over financial reporting.

Deloitte LLP
Chartered Professional Accountants
Licensed Public Accountants
Toronto, Canada
December 1, 2015

## Management's Report on Internal Control over Financial Reporting

Management of Royal Bank of Canada is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is a process designed by, or under the supervision of, the President and Chief Executive Officer and the Chief Administrative Officer and Chief Financial Officer and effected by the Board of Directors, management and other personnel 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. It includes those policies and procedures that:

- Pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions related to and dispositions of our assets;
- Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and our receipts and expenditures are made only in accordance with authorizations of our management and directors; and
- Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of our assets that could have a material effect on our financial statements.

Due to its inherent limitations, internal control over financial reporting may not prevent or detect misstatements on a timely basis. Also, projections of any evaluation of the effectiveness of internal control over financial reporting to future periods are subject to the risk that the controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management evaluated, under the supervision of and with the participation of the President and Chief Executive Officer and the Chief Administrative Officer and Chief Financial Officer, the effectiveness of our internal control over financial reporting as of October 31, 2015, based on the criteria set forth in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on that evaluation, management concluded that, as of October 31, 2015, internal control over financial reporting was effective based on the criteria established in the *Internal Control–Integrated Framework (2013).* Also, based on the results of our evaluation, management concluded that there were no material weaknesses that have been identified in internal control over financial reporting as of October 31, 2015.

Our internal control over financial reporting as of October 31, 2015 has been audited by Deloitte LLP, Independent Registered Public Accounting Firm, who also audited our Consolidated Financial Statements for the year ended October 31, 2015, as stated in the Report of Independent Registered Public Accounting Firm, which report expressed an unqualified opinion on the effectiveness of our internal control over financial reporting.

David I. McKay
President and Chief Executive Officer

Janice R. Fukakusa
Chief Administrative Officer and Chief Financial Officer

Toronto, December 1, 2015

## Report of Independent Registered Public Accounting Firm

To the Shareholders of Royal Bank of Canada

We have audited the internal control over financial reporting of Royal Bank of Canada and subsidiaries (the "Bank") as of October 31, 2015, based on the criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. The Bank's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Bank's internal control over financial reporting based on our audit.

We 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, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and 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 by, or under the supervision of, the company's principal executive and principal financial officers, or persons performing similar functions, and effected by the company's board of directors, management, and other personnel 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. 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 International Financial Reporting Standards as issued by the International Accounting Standards Board, 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 the inherent limitations of internal control over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may not be prevented or detected on a timely basis. Also, projections of any evaluation of the effectiveness of the internal control over financial reporting to future periods are subject to the risk that the 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 maintained, in all material respects, effective internal control over financial reporting as of October 31, 2015, based on the criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We have also audited, in accordance with Canadian generally accepted auditing standards and the standards of the Public Company Accounting Oversight Board (United States), the consolidated financial statements as of and for the year ended October 31, 2015 of the Bank and our report dated December 1, 2015 expressed an unqualified opinion on those consolidated financial statements.

Deloitte LLP
Chartered Professional Accountants
Licensed Public Accountants
Toronto, Canada
December 1, 2015

## Consolidated Balance Sheets

| (Millions of Canadian dollars) | As at October 31 2015 | October 31 2014 |
|---|---|---|
| **Assets** | | |
| **Cash and due from banks** | **$ 12,452** | $ 17,421 |
| **Interest-bearing deposits with banks** | **22,690** | 8,399 |
| **Securities** (Note 4) | | |
| Trading | **158,703** | 151,380 |
| Available-for-sale | **56,805** | 47,768 |
| | **215,508** | 199,148 |
| **Assets purchased under reverse repurchase agreements and securities borrowed** | **174,723** | 135,580 |
| **Loans** (Note 5) | | |
| Retail | **348,183** | 334,269 |
| Wholesale | **126,069** | 102,954 |
| | **474,252** | 437,223 |
| Allowance for loan losses (Note 5) | **(2,029)** | (1,994) |
| | **472,223** | 435,229 |
| **Segregated fund net assets** (Note 16) | **830** | 675 |
| **Other** | | |
| Customers' liability under acceptances | **13,453** | 11,462 |
| Derivatives (Note 8) | **105,626** | 87,402 |
| Premises and equipment, net (Note 9) | **2,728** | 2,684 |
| Goodwill (Note 10) | **9,289** | 8,647 |
| Other intangibles (Note 10) | **2,814** | 2,775 |
| Investments in joint ventures and associates (Note 12) | **360** | 295 |
| Employee benefit assets (Note 17) | **245** | 138 |
| Other assets (Note 13) | **41,267** | 30,695 |
| | **175,782** | 144,098 |
| **Total assets** | **$ 1,074,208** | $ 940,550 |
| **Liabilities and equity** | | |
| **Deposits** (Note 14) | | |
| Personal | **$ 220,566** | $ 209,217 |
| Business and government | **455,578** | 386,660 |
| Bank | **21,083** | 18,223 |
| | **697,227** | 614,100 |
| **Segregated fund net liabilities** (Note 16) | **830** | 675 |
| **Other** | | |
| Acceptances | **13,453** | 11,462 |
| Obligations related to securities sold short | **47,658** | 50,345 |
| Obligations related to assets sold under repurchase agreements and securities loaned | **83,288** | 64,331 |
| Derivatives (Note 8) | **107,860** | 88,982 |
| Insurance claims and policy benefit liabilities (Note 15) | **9,110** | 8,564 |
| Employee benefit liabilities (Note 17) | **1,969** | 2,420 |
| Other liabilities (Note 18) | **41,507** | 37,309 |
| | **304,845** | 263,413 |
| **Subordinated debentures** (Note 19) | **7,362** | 7,859 |
| **Total liabilities** | **1,010,264** | 886,047 |
| **Equity attributable to shareholders** (Note 21) | | |
| Preferred shares | **5,100** | 4,075 |
| Common shares (shares issued – 1,443,423,151 and 1,442,232,886) | **14,573** | 14,511 |
| Treasury shares – preferred (shares held – (63,179) and 1,207) | **(2)** | – |
| – common (shares held – 531,638 and 891,733) | **38** | 71 |
| Retained earnings | **37,811** | 31,615 |
| Other components of equity | **4,626** | 2,418 |
| | **62,146** | 52,690 |
| **Non-controlling interests** (Note 21) | **1,798** | 1,813 |
| **Total equity** | **63,944** | 54,503 |
| **Total liabilities and equity** | **$ 1,074,208** | $ 940,550 |

The accompanying notes are an integral part of these Consolidated Financial Statements.

David I. McKay
President and Chief Executive Officer

David F. Denison
Director

## Consolidated Statements of Income

| (Millions of Canadian dollars, except per share amounts) | For the year ended October 31 2015 | October 31 2014 | October 31 2013 |
|---|---|---|---|
| **Interest income** | | | |
| Loans | **$ 16,882** | $ 16,979 | $ 16,354 |
| Securities | **4,519** | 3,993 | 3,779 |
| Assets purchased under reverse repurchase agreements and securities borrowed | **1,251** | 971 | 941 |
| Deposits and other | **77** | 76 | 74 |
| | **22,729** | 22,019 | 21,148 |
| **Interest expense** | | | |
| Deposits and other | **5,723** | 5,873 | 5,694 |
| Other liabilities | **1,995** | 1,784 | 1,869 |
| Subordinated debentures | **240** | 246 | 336 |
| | **7,958** | 7,903 | 7,899 |
| **Net interest income** | **14,771** | 14,116 | 13,249 |
| **Non-interest income** | | | |
| Insurance premiums, investment and fee income (Note 15) | **4,436** | 4,957 | 3,911 |
| Trading revenue | **552** | 742 | 867 |
| Investment management and custodial fees | **3,778** | 3,355 | 2,870 |
| Mutual fund revenue | **2,881** | 2,621 | 2,201 |
| Securities brokerage commissions | **1,436** | 1,379 | 1,337 |
| Service charges | **1,592** | 1,494 | 1,437 |
| Underwriting and other advisory fees | **1,885** | 1,809 | 1,569 |
| Foreign exchange revenue, other than trading | **814** | 827 | 748 |
| Card service revenue | **798** | 689 | 632 |
| Credit fees | **1,184** | 1,080 | 1,092 |
| Net gains on available-for-sale securities (Note 4) | **145** | 192 | 188 |
| Share of profit in joint ventures and associates (Note 12) | **149** | 162 | 159 |
| Other | **900** | 685 | 422 |
| | **20,550** | 19,992 | 17,433 |
| **Total revenue** | **35,321** | 34,108 | 30,682 |
| **Provision for credit losses** (Note 5) | **1,097** | 1,164 | 1,237 |
| **Insurance policyholder benefits, claims and acquisition expense** (Note15) | **2,963** | 3,573 | 2,784 |
| **Non-interest expense** | | | |
| Human resources (Note 17 and 22) | **11,583** | 11,031 | 10,248 |
| Equipment | **1,277** | 1,147 | 1,081 |
| Occupancy | **1,410** | 1,330 | 1,235 |
| Communications | **888** | 847 | 796 |
| Professional fees | **932** | 763 | 753 |
| Amortization of other intangibles (Note 10) | **712** | 666 | 566 |
| Other | **1,836** | 1,877 | 1,535 |
| | **18,638** | 17,661 | 16,214 |
| **Income before income taxes** | **12,623** | 11,710 | 10,447 |
| Income taxes (Note 24) | **2,597** | 2,706 | 2,105 |
| **Net income** | **$ 10,026** | $ 9,004 | $ 8,342 |
| **Net income attributable to:** | | | |
| Shareholders | **$ 9,925** | $ 8,910 | $ 8,244 |
| Non-controlling interests | **101** | 94 | 98 |
| | **$ 10,026** | $ 9,004 | $ 8,342 |
| **Basic earnings per share** (in dollars) (Note 25) | **$ 6.75** | $ 6.03 | $ 5.53 |
| **Diluted earnings per share** (in dollars) (Note 25) | **6.73** | 6.00 | 5.49 |
| **Dividends per common share** (in dollars) | **3.08** | 2.84 | 2.53 |

The accompanying notes are an integral part of these Consolidated Financial Statements.

## Consolidated Statements of Comprehensive Income

| (Millions of Canadian dollars) | For the year ended October 31 2015 | October 31 2014 | October 31 2013 |
|---|---|---|---|
| **Net income** | **$ 10,026** | $ 9,004 | $ 8,342 |
| **Other comprehensive income (loss), net of taxes** (Note 24) | | | |
| **Items that will be reclassified subsequently to income:** | | | |
| **Net change in unrealized gains (losses) on available-for-sale securities** | | | |
| Net unrealized gains (losses) on available-for-sale securities | **(76)** | 143 | 15 |
| Reclassification of net losses (gains) on available-for-sale securities to income | **(41)** | (58) | (87) |
| | **(117)** | 85 | (72) |
| **Foreign currency translation adjustments** | | | |
| Unrealized foreign currency translation gains (losses) | **5,885** | 2,743 | 1,402 |
| Net foreign currency translation gains (losses) from hedging activities | **(3,223)** | (1,585) | (912) |
| Reclassification of losses (gains) on foreign currency translation to income | **(224)** | 44 | 1 |
| Reclassification of losses (gains) on net investment hedging activities to income | **111** | 3 | (1) |
| | **2,549** | 1,205 | 490 |
| **Net change in cash flow hedges** | | | |
| Net gains (losses) on derivatives designated as cash flow hedges | **(541)** | (108) | (11) |
| Reclassification of losses (gains) on derivatives designated as cash flow hedges to income | **330** | 28 | (30) |
| | **(211)** | (80) | (41) |
| **Items that will not be reclassified subsequently to income:** | | | |
| Remeasurements of employee benefit plans (Note 17) | **582** | (236) | 319 |
| Net fair value change due to credit risk on financial liabilities designated as at fair value through profit or loss | **350** | (59) | - |
| | **932** | (295) | 319 |
| **Total other comprehensive income (loss), net of taxes** | **3,153** | 915 | 696 |
| **Total comprehensive income** | **$ 13,179** | $ 9,919 | $ 9,038 |
| **Total comprehensive income attributable to:** | | | |
| Shareholders | **$ 13,065** | $ 9,825 | $ 8,940 |
| Non-controlling interests | **114** | 94 | 98 |
| | **$ 13,179** | $ 9,919 | $ 9,038 |

The accompanying notes are an integral part of these Consolidated Financial Statements.

**Consolidated Statements of Changes in Equity**

| (Millions of Canadian dollars) | Preferred shares | Common shares | Treasury shares – preferred | Treasury shares – common | Retained earnings | Other components of equity: Available-for-sale securities | Other components of equity: Foreign currency translation | Other components of equity: Cash flow hedges | Other components of equity: Total other components of equity | Equity attributable to shareholders | Non-controlling interests | Total equity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Balance at November 1, 2012** | $ 4,813 | $ 14,323 | $ 1 | $ 30 | $ 23,162 | $ 419 | $ 196 | $ 216 | $ 831 | $ 43,160 | $ 1,761 | $44,921 |
| Changes in equity | | | | | | | | | | | | |
| Issues of share capital | – | 121 | – | – | – | – | – | – | – | 121 | – | 121 |
| Common shares purchased for cancellation | – | (67) | – | – | (341) | – | – | – | – | (408) | – | (408) |
| Preferred shares redeemed | (213) | – | – | – | (9) | – | – | – | – | (222) | – | (222) |
| Sales of treasury shares | – | – | 127 | 4,453 | – | – | – | – | – | 4,580 | – | 4,580 |
| Purchases of treasury shares | – | – | (127) | (4,442) | – | – | – | – | – | (4,569) | – | (4,569) |
| Share-based compensation awards | – | – | – | – | (7) | – | – | – | – | (7) | – | (7) |
| Dividends on common shares | – | – | – | – | (3,651) | – | – | – | – | (3,651) | – | (3,651) |
| Dividends on preferred shares and other | – | – | – | – | (253) | – | – | – | – | (253) | (94) | (347) |
| Other | – | – | – | – | (26) | – | – | – | – | (26) | 30 | 4 |
| Net income | – | – | – | – | 8,244 | – | – | – | – | 8,244 | 98 | 8,342 |
| Total other comprehensive income (loss), net of taxes | – | – | – | – | 319 | (72) | 490 | (41) | 377 | 696 | – | 696 |
| **Balance at October 31, 2013** | $ 4,600 | $ 14,377 | $ 1 | $ 41 | $ 27,438 | $ 347 | $ 686 | $ 175 | $ 1,208 | $ 47,665 | $ 1,795 | $49,460 |
| Changes in equity | | | | | | | | | | | | |
| Issues of share capital | 1,000 | 150 | – | – | (14) | – | – | – | – | 1,136 | – | 1,136 |
| Common shares purchased for cancellation | – | (16) | – | – | (97) | – | – | – | – | (113) | – | (113) |
| Preferred shares redeemed | (1,525) | – | – | – | – | – | – | – | – | (1,525) | – | (1,525) |
| Sales of treasury shares | – | – | 124 | 5,333 | – | – | – | – | – | 5,457 | – | 5,457 |
| Purchases of treasury shares | – | – | (125) | (5,303) | – | – | – | – | – | (5,428) | – | (5,428) |
| Share-based compensation awards | – | – | – | – | (9) | – | – | – | – | (9) | – | (9) |
| Dividends on common shares | – | – | – | – | (4,097) | – | – | – | – | (4,097) | – | (4,097) |
| Dividends on preferred shares and other | – | – | – | – | (213) | – | – | – | – | (213) | (94) | (307) |
| Other | – | – | – | – | (8) | – | – | – | – | (8) | 18 | 10 |
| Net income | – | – | – | – | 8,910 | – | – | – | – | 8,910 | 94 | 9,004 |
| Total other comprehensive income (loss), net of taxes | – | – | – | – | (295) | 85 | 1,205 | (80) | 1,210 | 915 | – | 915 |
| **Balance at October 31, 2014** | $ 4,075 | $ 14,511 | $ – | $ 71 | $ 31,615 | $ 432 | $ 1,891 | $ 95 | $ 2,418 | $ 52,690 | $ 1,813 | $54,503 |
| Changes in equity | | | | | | | | | | | | |
| Issues of share capital | **1,350** | **62** | **–** | **–** | **(21)** | **–** | **–** | **–** | **–** | **1,391** | **–** | **1,391** |
| Preferred shares redeemed | **(325)** | **–** | **–** | **–** | **–** | **–** | **–** | **–** | **–** | **(325)** | **–** | **(325)** |
| Sales of treasury shares | **–** | **–** | **117** | **6,098** | **–** | **–** | **–** | **–** | **–** | **6,215** | **–** | **6,215** |
| Purchases of treasury shares | **–** | **–** | **(119)** | **(6,131)** | **–** | **–** | **–** | **–** | **–** | **(6,250)** | **–** | **(6,250)** |
| Share-based compensation awards | **–** | **–** | **–** | **–** | **(1)** | **–** | **–** | **–** | **–** | **(1)** | **–** | **(1)** |
| Dividends on common shares | **–** | **–** | **–** | **–** | **(4,443)** | **–** | **–** | **–** | **–** | **(4,443)** | **–** | **(4,443)** |
| Dividends on preferred shares and other | **–** | **–** | **–** | **–** | **(191)** | **–** | **–** | **–** | **–** | **(191)** | **(92)** | **(283)** |
| Other | **–** | **–** | **–** | **–** | **(5)** | **–** | **–** | **–** | **–** | **(5)** | **(37)** | **(42)** |
| Net income | **–** | **–** | **–** | **–** | **9,925** | **–** | **–** | **–** | **–** | **9,925** | **101** | **10,026** |
| Total other comprehensive income (loss), net of taxes | **–** | **–** | **–** | **–** | **932** | **(117)** | **2,536** | **(211)** | **2,208** | **3,140** | **13** | **3,153** |
| **Balance at October 31, 2015** | **$ 5,100** | **$ 14,573** | **$ (2)** | **$ 38** | **$ 37,811** | **$ 315** | **$ 4,427** | **$ (116)** | **$ 4,626** | **$ 62,146** | **$ 1,798** | **$63,944** |

The accompanying notes are an integral part of these Consolidated Financial Statements.

## Consolidated Statements of Cash Flows

| (Millions of Canadian dollars) | For the year ended October 31 2015 | October 31 2014 | October 31 2013 |
|---|---|---|---|
| **Cash flows from operating activities** | | | |
| Net income | **$ 10,026** | $ 9,004 | $ 8,342 |
| Adjustments for non-cash items and others | | | |
| Provision for credit losses | **1,097** | 1,164 | 1,237 |
| Depreciation | **527** | 499 | 445 |
| Deferred income taxes | **302** | (207) | (72) |
| Amortization and Impairment of other intangibles | **719** | 674 | 576 |
| Impairment of investments in joint ventures and associates | **3** | – | 20 |
| Losses (Gains) on sale of premises and equipment | **(32)** | 14 | (24) |
| Losses (Gains) on available-for-sale securities | **(220)** | (228) | (217) |
| Losses (Gains) on disposition of business | **(77)** | 95 | (17) |
| Impairment of available-for-sale securities | **59** | 25 | 26 |
| Share of loss (profit) in joint ventures and associates | **(149)** | (162) | (159) |
| Net gains on sales of joint ventures and associates | **–** | (62) | – |
| Adjustments for net changes in operating assets and liabilities | | | |
| Insurance claims and policy benefit liabilities | **546** | 530 | 113 |
| Net change in accrued interest receivable and payable | **(279)** | 187 | (467) |
| Current income taxes | **(905)** | (206) | 354 |
| Derivative assets | **(18,228)** | (12,580) | 16,475 |
| Derivative liabilities | **18,893** | 12,237 | (20,017) |
| Trading securities | **(7,401)** | (7,253) | (23,038) |
| Loans, net of securitizations | **(34,964)** | (27,096) | (20,175) |
| Assets purchased under reverse repurchase agreements and securities borrowed | **(39,143)** | (18,063) | (5,260) |
| Deposits, net of securitizations | **86,979** | 52,339 | 41,857 |
| Obligations related to assets sold under repurchase agreements and securities loaned | **18,957** | 3,915 | (3,616) |
| Obligations related to securities sold short | **(2,687)** | 3,233 | 6,372 |
| Brokers and dealers receivable and payable | **664** | (638) | 536 |
| Other | **(10,538)** | (2,247) | 3,794 |
| **Net cash from (used in) operating activities** | **24,149** | 15,174 | 7,085 |
| **Cash flows from investing activities** | | | |
| Change in interest-bearing deposits with banks | **(14,456)** | 640 | 1,207 |
| Proceeds from sale of available-for-sale securities | **10,331** | 8,795 | 6,476 |
| Proceeds from maturity of available-for-sale securities | **33,294** | 38,950 | 37,099 |
| Purchases of available-for-sale securities | **(51,304)** | (54,208) | (41,057) |
| Proceeds from maturity of held-to-maturity securities | **16** | 285 | 401 |
| Purchases of held-to-maturity securities | **(1,942)** | (1,625) | (284) |
| Net acquisitions of premises and equipment and other intangibles | **(1,337)** | (1,227) | (932) |
| Proceeds from dispositions | **255** | 173 | 17 |
| Cash used in acquisitions | **–** | – | (2,537) |
| **Net cash from (used in) investing activities** | **(25,143)** | (8,217) | 390 |
| **Cash flows from financing activities** | | | |
| Redemption of trust capital securities | **–** | (900) | – |
| Issue of subordinated debentures | **1,000** | 2,000 | 2,046 |
| Repayment of subordinated debentures | **(1,700)** | (1,600) | (2,000) |
| Issue of common shares | **62** | 150 | 121 |
| Common shares purchased for cancellation | **–** | (113) | (408) |
| Issue of preferred shares | **1,350** | 1,000 | – |
| Redemption of preferred shares | **(325)** | (1,525) | (222) |
| Sales of treasury shares | **6,215** | 5,457 | 4,580 |
| Purchase of treasury shares | **(6,250)** | (5,428) | (4,569) |
| Dividends paid | **(4,564)** | (4,211) | (3,810) |
| Issuance costs | **(21)** | (14) | – |
| Dividends/distributions paid to non-controlling interests | **(92)** | (94) | (94) |
| Change in short-term borrowings of subsidiaries | **(105)** | (6) | (93) |
| **Net cash from (used in) financing activities** | **(4,430)** | (5,284) | (4,449) |
| Effect of exchange rate changes on cash and due from banks | **455** | 198 | 96 |
| **Net change in cash and due from banks** | **(4,969)** | 1,871 | 3,122 |
| Cash and due from banks at beginning of period (1) | **17,421** | 15,550 | 12,428 |
| **Cash and due from banks at end of period** (1) | **$ 12,452** | $ 17,421 | $ 15,550 |
| **Cash flows from operating activities include:** | | | |
| Amount of interest paid | **$ 7,096** | $ 7,186 | $ 7,223 |
| Amount of interest received | **21,132** | 20,552 | 19,348 |
| Amount of dividend received | **1,843** | 1,702 | 1,478 |
| Amount of income taxes paid | **2,046** | 2,315 | 1,479 |

(1) We are required to maintain balances with central banks and other regulatory authorities. The total balances were $2.6 billion as at October 31, 2015 (October 31, 2014 – $2.0 billion; October 31, 2013 – $2.6 billion; November 1, 2012 – $2.1 billion).

The accompanying notes are an integral part of these Consolidated Financial Statements.

## Note 1 General information

Royal Bank of Canada and its subsidiaries (the Bank) provide diversified financial services including personal and commercial banking, wealth management, insurance, investor services and capital markets products and services on a global basis. Refer to Note 30 for further details on our business segments.

The parent bank, Royal Bank of Canada, is a Schedule I Bank under the *Bank Act* (Canada) incorporated and domiciled in Canada. Our corporate headquarters are located at Royal Bank Plaza, 200 Bay Street, Toronto, Ontario, Canada and our head office is located at 1 Place Ville-Marie, Montreal, Quebec, Canada. Our common shares are listed on the Toronto Stock Exchange and New York Stock Exchange with the ticker symbol RY.

These Consolidated Financial Statements are prepared in compliance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB). Unless otherwise stated, monetary amounts are stated in Canadian dollars. Tabular information is stated in millions of dollars, except per share amounts and percentages. These Consolidated Financial Statements also comply with Subsection 308 of the *Bank Act* (Canada), which states that, except as otherwise specified by the Office of the Superintendent of Financial Institutions (OSFI), our Consolidated Financial Statements are to be prepared in accordance with IFRS. The accounting policies outlined in Note 2 have been consistently applied to all periods presented.

On December 1, 2015, the Board of Directors authorized the Consolidated Financial Statements for issue.

## Note 2 Summary of significant accounting policies, estimates and judgments

The significant accounting policies used in the preparation of these Consolidated Financial Statements, including the accounting requirements prescribed by OSFI, are summarized below. These accounting policies conform, in all material respects, to IFRS.

**General**

**Use of estimates and assumptions**

In preparing our Consolidated Financial Statements, management is required to make subjective estimates and assumptions that affect the reported amount of assets, liabilities, net income and related disclosures. Estimates made by management are based on historical experience and other assumptions that are believed to be reasonable. Key sources of estimation uncertainty include: securities impairment, determination of fair value of financial instruments, the allowance for credit losses, derecognition of financial assets, insurance claims and policy benefit liabilities, pensions and other post-employment benefits, income taxes, carrying value of goodwill and other intangible assets, litigation provisions, and deferred revenue under the credit card customer loyalty reward program. Accordingly, actual results may differ from these and other estimates thereby impacting our future Consolidated Financial Statements. Refer to the relevant accounting policies in this Note for details on our use of estimates and assumptions.

**Significant judgments**

In preparation of these Consolidated Financial Statements, management is required to make significant judgments that affect the carrying amounts of certain assets and liabilities, and the reported amounts of revenues and expenses recorded during the period. Significant judgments have been made in the following areas and discussed as noted in the Consolidated Financial Statements:

| | | | |
|---|---|---|---|
| Consolidation of structured entities | Note 2 – page 125<br>Note 7 – page 158 | Securities impairment | Note 2 – page 126<br>Note 4 – page 150 |
| Fair value of financial instruments | Note 2 – page 127<br>Note 3 – page 136 | Application of the effective interest method | Note 2 – page 128 |
| Allowance for credit losses | Note 2 – page 130<br>Note 5 – page 154 | Derecognition of financial assets | Note 2 – page 131<br>Note 6 – page 157 |
| Employee benefits | Note 2 – page 132<br>Note 17 – page 175 | Income taxes | Note 2 – page 132<br>Note 24 – page 187 |
| Goodwill and other intangibles | Note 2 – page 133<br>Note 10 – page 168<br>Note 11 – page 170 | Provisions | Note 2 – page 134<br>Note 26 – page 189<br>Note 27 – page 192 |

**Basis of consolidation**

Our Consolidated Financial Statements include the assets and liabilities and results of operations of the parent company, Royal Bank of Canada, and its subsidiaries including certain structured entities, after elimination of intercompany transactions, balances, revenues and expenses.

*Consolidation*

Subsidiaries are those entities, including structured entities, over which we have control. We control an entity when we are exposed, or have rights, to variable returns from our involvement with the entity and have the ability to affect those returns through our power over the investee. We have power over an entity when we have existing rights that give us the current ability to direct the activities that most significantly affect the entity's returns (relevant activities). Power may be determined on the basis of voting rights or, in the case of structured entities, other contractual arrangements.

We are not deemed to control an entity when we exercise power over an entity in an agency capacity. In determining whether we are acting as an agent, we consider the overall relationship between us, the investee and other parties to the arrangement with respect to the following factors: (i) the scope of our decision making power; (ii) the rights held by other parties; (iii) the remuneration to which we are entitled; and (iv) our exposure to variability of returns.

The determination of control is based on the current facts and circumstances and is continuously assessed. In some circumstances, different factors and conditions may indicate that different parties control an entity depending on whether those factors and conditions are assessed in isolation or in totality. Significant judgment is applied in assessing the relevant factors and conditions in totality when determining whether we control an entity. Specifically, judgment is applied in assessing whether we have substantive decision making rights over the relevant activities and whether we are exercising our power as a principal or an agent.

We consolidate all subsidiaries from the date we obtain control, and cease consolidation when an entity is no longer controlled by us. Our consolidation conclusions affect the classification and amount of assets, liabilities, revenues and expenses reported in our Consolidated Financial Statements.

Non-controlling interests in subsidiaries that we consolidate are shown on our Consolidated Balance Sheets as a separate component of equity which is distinct from our shareholders' equity. The net income attributable to non-controlling interests is separately disclosed in our Consolidated Statements of Income.

*Investments in associates and joint ventures*

Our investments in associated corporations and limited partnerships over which we have significant influence are accounted for using the equity method. The equity method is also applied to our interests in joint ventures over which we have joint control. Under the equity method of accounting, investments are initially recorded at cost, and the carrying amount is increased or decreased to recognize our share of the investee's net profit or loss, including our proportionate share of the investee's other comprehensive income (OCI), subsequent to the date of acquisition.

*Non-current assets held for sale and discontinued operations*

Non-current assets (and disposal groups) are classified as held for sale if their carrying amounts will be recovered principally through a sale transaction rather than through continuing use. This condition is satisfied when the asset is available for immediate sale in its present condition, management is committed to the sale, and it is highly probable to occur within one year. Non-current assets (and disposal groups) classified as held for sale are measured at the lower of their previous carrying amount and fair value less costs to sell and if significant, are presented separately from other assets on our Consolidated Balance Sheets.

A disposal group is classified as a discontinued operation if it meets the following conditions: (i) it is a component that can be distinguished operationally and financially from the rest of our operations and (ii) it represents either a separate major line of business or is part of a single co-ordinated plan to dispose of a separate major line of business or geographical area of operations. Disposal groups classified as discontinued operations are presented separately from our continuing operations in our Consolidated Statements of Income.

**Changes in accounting policies**

During the first quarter, we adopted the following new accounting pronouncements:

**IAS 32 *Financial Instruments: Presentation* (IAS 32)**

Amendments to IAS 32 clarify the existing requirements for offsetting financial assets and financial liabilities. The standard provides clarifications on the legal right to offset transactions, and when transactions settled through a gross settlement system would meet the simultaneous settlement criteria. We retrospectively adopted the amendments on November 1, 2014. The adoption of these amendments did not have an impact on our Consolidated Financial Statements.

**International Financial Reporting Standards (IFRS) Interpretations Committee IFRIC Interpretation 21 *Levies* (IFRIC 21)**

IFRIC 21 provides guidance on when to recognize a liability to pay a levy that is accounted for in accordance with IAS 37 *Provisions, Contingent Liabilities and Contingent Assets*. It also addresses the accounting for a liability to pay a levy whose timing and amount is certain. The interpretation clarifies that the obligating event that gives rise to a liability to pay a levy is the activity described in the relevant legislation that triggers the payment of the levy. We prospectively adopted the standard on November 1, 2014. We did not restate our quarterly or annual results for periods before November 1, 2014 as the amounts were not significant. The adoption of this interpretation did not have a material impact on our Consolidated Financial Statements.

**Financial instruments – Recognition and measurement**

**Securities**

Securities are classified at inception, based on management's intention, as at fair value through profit or loss (FVTPL), available-for-sale (AFS) or held-to-maturity. Certain debt securities with fixed or determinable payments and which are not quoted in an active market may be classified as loans and receivables.

Trading securities include securities purchased for sale in the near term which are classified as at FVTPL by nature and securities designated as at FVTPL under the fair value option. Obligations to deliver trading securities sold but not yet purchased are recorded as liabilities and carried at fair value. Realized and unrealized gains and losses on these securities are recorded as Trading revenue in Non-interest income. Dividends and interest income accruing on Trading securities are recorded in Interest income. Interest and dividends accrued on interest-bearing and equity securities sold short are recorded in Interest expense.

AFS securities include: (i) securities which may be sold to meet liquidity needs, in response to or in anticipation of changes in interest rates and resulting prepayment risk, changes in foreign currency risk, changes in funding sources or terms, and (ii) loan substitute securities which are client financings that have been structured as after-tax investments rather than conventional loans in order to provide the clients with a borrowing rate advantage. AFS securities are measured at fair value. Unrealized gains and losses arising from changes in fair value are included in Other components of equity. Changes in foreign exchange rates for AFS equity securities are recognized in Other components of equity, while changes in foreign exchange rates for AFS debt securities are recognized in Foreign exchange revenue, other than trading in Non-interest income. When the security is sold, the cumulative gain or loss recorded in Other components of equity is included as Net gains on AFS securities in Non-interest income. Purchase premiums or discounts on AFS debt securities are amortized over the life of the security using the effective interest method and are recognized in Net interest income.

At each reporting date, and more frequently when conditions warrant, we evaluate our AFS securities to determine whether there is any objective evidence of impairment. Such evidence includes: for debt instruments, when an adverse effect on future cash flows from the asset or group of assets can be reliably estimated; for equity securities, when there is a significant or prolonged decline in the fair value of the investment below its cost.

When assessing impairment for debt instruments we primarily consider counterparty ratings and security-specific factors, including subordination, external ratings, and the value of any collateral held, for which there may not be a readily accessible market. Significant judgment is required in assessing impairment as management is required to consider all available evidence in determining whether objective evidence of impairment exists and whether the principal and interest on the AFS debt security can be fully recovered. For complex debt instruments we use cash flow projection models which incorporate actual and projected cash flows for each security based on security specific factors using a number of assumptions and inputs that involve management judgment, such as default, prepayment and recovery rates. Due to the subjective nature of choosing these inputs and assumptions, the actual amount of the future cash flows and their timing may differ from the estimates used by management and consequently may cause a different conclusion as to the recognition of impairment or measurement of impairment loss.

In assessing whether there is any objective evidence that suggests that equity securities are impaired, we consider factors which include the length of time and extent the fair value has been below cost, along with management's assessment of the financial condition, business and other risks of the issuer. Management weighs all these factors to determine the impairment but to the extent that management judgment may differ from the actual experience of the timing and amount of the recovery of the fair value, the estimate for impairment could change from period to period based upon future events that may or may not occur, and the conclusion for the impairment of the equity securities may differ.

If an AFS security is impaired, the cumulative unrealized loss previously recognized in Other components of equity is removed from equity and recognized in Net gains on AFS securities under Non-interest income. This amount is determined as the difference between the cost/amortized cost and current fair value of the security less any impairment loss previously recognized. Subsequent to impairment, further declines in fair value are recorded in Non-interest income, while increases in fair value are recognized in Other components of equity until sold. For AFS debt securities, reversal of previously recognized impairment losses is recognized in our Consolidated Statements of Income if the recovery is objectively related to a specific event occurring after recognition of the impairment loss.

Held-to-maturity securities are debt securities where we have the intention and the ability to hold the investment until its maturity date. These securities are initially recorded at fair value and are subsequently measured at amortized cost using the effective interest method, less any impairment losses which we assess using the same impairment model as for loans. Interest income and amortization of premiums and discounts on debt securities are recorded in Net interest income. For held-to-maturity securities, reversal of previously recognized impairment losses is recognized in our Consolidated Statements of Income if the recovery is objectively related to a specific event occurring after the recognition of the impairment loss. Reversals of impairment losses on held-to-maturity securities are recorded to a maximum of what the amortized cost of the investment would have been, had the impairment not been recognized at the date the impairment is reversed. Held-to-maturity securities have been included with AFS securities on our Consolidated Balance Sheets.

We account for all of our securities using settlement date accounting and changes in fair value between the trade date and settlement date are reflected in income for securities classified or designated as at FVTPL, and changes in the fair value of AFS securities between the trade and settlement dates are recorded in OCI except for changes in foreign exchange rates on debt securities, which are recorded in Non-interest income.

**Fair value option**

A financial instrument can be designated as at FVTPL (the fair value option) on its initial recognition even if the financial instrument was not acquired or incurred principally for the purpose of selling or repurchasing it in the near term. An instrument that is designated as at FVTPL by way of this fair value option must have a reliably measurable fair value and satisfy one of the following criteria: (i) it eliminates or significantly reduces a measurement or recognition inconsistency that would otherwise arise from measuring assets or liabilities, or recognizing gains and losses on them on a different basis (an accounting mismatch); (ii) it belongs to a group of financial assets or financial liabilities or both that are managed, evaluated, and reported to key management personnel on a fair value basis in accordance with our risk management strategy, and we can demonstrate that significant financial risks are eliminated or significantly reduced; or (iii) there is an embedded derivative in the financial or non-financial host contract and the derivative is not closely related to the host contract. These instruments cannot be reclassified out of the FVTPL category while they are held or issued.

Financial assets designated as at FVTPL are recorded at fair value and any unrealized gain or loss arising due to changes in fair value is included in Trading revenue or Non-interest income – Other. Financial liabilities designated as at FVTPL are recorded at fair value and fair value changes attributable to changes in our own credit risk are recorded in OCI. Amounts recognized in OCI will not be reclassified subsequently to net income. The remaining fair value changes are recorded in Trading revenue or Non-interest income – Other. Upon initial recognition, if we determine that presenting the effects of own credit risk changes in OCI would create or enlarge an accounting mismatch in net income, the full fair value change in our debt designated as at FVTPL is recognized in net income.

To determine the fair value adjustments on our debt designated as at FVTPL, we calculate the present value of the instruments based on the contractual cash flows over the term of the arrangement by using our effective funding rate at the beginning and end of the period with the change in present value recorded in OCI, Trading revenue or Non-interest income – Other as appropriate.

**Determination of fair value**

The fair value of a financial instrument is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. We determine fair value by incorporating all factors that market participants would consider in setting a price, including commonly accepted valuation approaches.

The Board of Directors provides oversight on valuation of financial instruments, primarily through the Audit Committee and Risk Committee. The Audit Committee reviews the presentation and disclosure of financial instruments that are measured at fair value, while the Risk Committee assesses adequacy of governance structures and control processes for valuation of these instruments.

We have established policies, procedures and controls for valuation methodologies and techniques to ensure fair value is reasonably estimated. Major valuation processes and controls include, but are not limited to, profit and loss decomposition, independent price verification (IPV) and model validation standards. These control processes are managed by either Finance or Group Risk Management and are independent of the relevant businesses and their trading functions. Profit and loss decomposition is a process to explain the fair value changes of certain positions and is performed daily for trading portfolios. All fair value instruments are subject to IPV, a process whereby trading function valuations are verified against external market prices and other relevant market data. Market data sources include traded prices, brokers and price vendors. We give priority to those third-party pricing services and prices having the highest and most consistent accuracy. The level of accuracy is determined over time by comparing third-party price values to traders' or system values, to other pricing service values and, when available, to actual trade data. Other valuation techniques are used when a price or quote is not available. Some valuation processes use models to determine fair value. We have a systematic and consistent approach to control model use. Valuation models are approved for use within our model risk management framework. The framework addresses, among other things, model development standards, validation processes and procedures, and approval authorities. Model validation ensures that a model is suitable for its intended use and sets parameters for its use. All models are revalidated regularly by qualified personnel who are independent of the model design and development. Annually our model risk profile is reported to the Board of Directors.

IFRS 13 *Fair Value Measurement* permits an exception, through an accounting policy choice, to measure fair value of a portfolio of financial instruments on a net open risk position basis when certain criteria are met. We have elected to use this policy choice to determine fair value of certain portfolios of financial instruments, primarily derivatives, on a net exposure to market or credit risk.

We record valuation adjustments to appropriately reflect counterparty credit quality of our derivative portfolio, differences between the overnight index swap (OIS) curve and London Interbank Offered Rates (LIBOR) for collateralized derivatives, funding valuation adjustments (FVA) for uncollateralized and under-collateralized over-the-counter (OTC) derivatives, unrealized gains or losses at inception of the transaction, bid-offer spreads, unobservable parameters and model limitations. These adjustments may be subjective as they require significant judgment in the input selection, such as probability of default and recovery rate, and are intended to arrive at fair value that is determined based on

assumptions that market participants would use in pricing the financial instrument. The realized price for a transaction may be different from its recorded value that is previously estimated using management judgment, and may therefore impact unrealized gains and losses recognized in Non-interest income – Trading revenue or Other.

Valuation adjustments are recorded for the credit risk of our derivative portfolios in order to arrive at their fair values. Credit valuation adjustments (CVA) take into account our counterparties' creditworthiness, the current and potential future mark-to-market of the transactions, and the effects of credit mitigants such as master netting and collateral agreements. CVA amounts are derived from estimates of exposure at default, probability of default, recovery rates on a counterparty basis, and market and credit factor correlations. Exposure at default is the amounts of expected derivative related assets and liabilities at the time of default, estimated through modeling using underlying risk factors. Probability of default and recovery rate are generally implied from the market prices for credit protection and credit ratings of the counterparty. Correlation is the statistical measure of how credit and market factors may move in relation to one another. Correlation is estimated using historical data and market data where available. CVA is calculated daily and changes are recorded in Non-interest income – Trading revenue.

In the determination of fair value of collateralized OTC derivatives using the OIS curve, our valuation approach accounts for the difference between certain OIS rates and LIBOR for derivatives valuation as valuation adjustments.

FVA are also calculated to incorporate cost and benefit of funding in the valuation of uncollateralized and under-collateralized OTC derivatives. Future expected cash flows of these derivatives are discounted to reflect the cost and benefit of funding the derivatives by using a funding curve, implied volatilities and correlations as inputs.

Where required, a valuation adjustment is made to reflect the unrealized gain or loss at inception of a financial instrument contract where the fair value of that financial instrument is not obtained from a quoted market price or cannot be evidenced by other observable market transactions based on a valuation technique incorporating observable market data.

A bid-offer valuation adjustment is required when a financial instrument is valued at the mid-market price, instead of the bid or offer price for asset or liability positions, respectively. The valuation adjustment takes into account the spread from the mid to either the bid or offer price.

Some valuation models require parameter calibration from such factors as market observed option prices. The calibration of parameters may be sensitive to factors such as the choice of instruments or optimization methodology. A valuation adjustment is also estimated to mitigate the uncertainties of parameter calibration and model limitations.

In determining fair value, a hierarchy is used which prioritizes the inputs to valuation techniques. The fair value hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). Determination of fair value based on this hierarchy requires the use of observable market data whenever available. Level 1 inputs are unadjusted quoted prices in active markets for identical assets or liabilities that we have the ability to access at the measurement date. Level 2 inputs include quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active, and model inputs that are either observable, or can be corroborated by observable market data for substantially the full term of the assets or liabilities. Level 3 inputs are one or more inputs that are unobservable and significant to the fair value of the asset or liability. Unobservable inputs are used to measure fair value to the extent that observable inputs are not available at the measurement date. The availability of inputs for valuation may affect the selection of valuation techniques. The classification of a financial instrument in the hierarchy for disclosure purposes is based upon the lowest level of input that is significant to the measurement of fair value.

Where observable prices or inputs are not available, management judgment is required to determine fair values by assessing other relevant sources of information such as historical data, proxy information from similar transactions, and through extrapolation and interpolation techniques. For more complex or illiquid instruments, significant judgment is required in the determination of the model used, the selection of model inputs, and in some cases the application of valuation adjustments to the model value or quoted price for inactively traded financial instruments, as the selection of model inputs may be subjective and the inputs may be unobservable. Unobservable inputs are inherently uncertain as there is little or no market data available from which to determine the level at which the transaction would occur under normal business circumstances. Appropriate parameter uncertainty and market risk valuation adjustments for such inputs and other model risk valuation adjustments are assessed in all such instances.

**Interest**

Interest is recognized in Interest income and Interest expense in the Consolidated Statements of Income for all interest bearing financial instruments using the effective interest method. The effective interest rate is the rate that discounts estimated future cash flows over the expected life of the financial asset or liability to the net carrying amount upon initial recognition. Significant judgment is applied in determining the effective interest rate due to uncertainty in the timing and amounts of future cash flows.

**Transaction costs**

Transaction costs are expensed as incurred for financial instruments classified or designated as at FVTPL. For other financial instruments, transaction costs are capitalized on initial recognition. For financial assets and financial liabilities measured at amortized cost, capitalized transaction costs are amortized through Net income over the estimated life of the instrument using the effective interest method. For AFS financial assets measured at fair value that do not have fixed or determinable payments and no fixed maturity, capitalized transaction costs are recognized in Net income when the asset is derecognized or becomes impaired.

**Offsetting financial assets and financial liabilities**

Financial assets and financial liabilities are offset on the balance sheet when there exists both a legally enforceable right to offset the recognized amounts and an intention to settle on a net basis, or realize the asset and settle the liability simultaneously.

**Assets purchased under reverse repurchase agreements and sold under repurchase agreements**

We purchase securities under agreements to resell (reverse repurchase agreement) and take possession of these securities. Reverse repurchase agreements are treated as collateralized lending transactions whereby we monitor the market value of the securities purchased and additional collateral is obtained when appropriate. We have the right to liquidate the collateral held in the event of counterparty default. We also sell securities under agreements to repurchase (repurchase agreements), which are treated as collateralized borrowing transactions. The securities received under reverse repurchase agreements and securities delivered under repurchase agreements are not recognized on, or derecognized from, our Consolidated Balance Sheets, respectively, unless the risks and rewards of ownership are obtained or relinquished.

Reverse repurchase agreements and repurchase agreements are carried on our Consolidated Balance Sheets at the amounts at which the securities were initially acquired or sold, except when they are designated as at FVTPL and are recorded at fair value. Interest earned on reverse

repurchase agreements is included in Interest income, and interest incurred on repurchase agreements is included in Interest expense in our Consolidated Statements of Income. Changes in fair value for reverse repurchase agreements and repurchase agreements designated as at FVTPL are included in Trading revenue or Other in Non-interest income.

**Derivatives**

Derivatives are primarily used in sales and trading activities. Derivatives are also used to manage our exposure to interest, currency, credit and other market risks. The most frequently used derivative products are interest rate swaps, interest rate futures, forward rate agreements, interest rate options, foreign exchange forward contracts, cross currency swaps, foreign currency futures, foreign currency options, equity swaps and credit derivatives. All derivative instruments are recorded on our Consolidated Balance Sheets at fair value, including those derivatives that are embedded in financial or non-financial contracts and are not closely related to the host contracts.

When derivatives are embedded in other financial instruments or host contracts, such combinations are known as hybrid instruments with the effect that some of the cash flows of a hybrid instrument vary in a way similar to a stand-alone derivative. If the host contract is not carried at fair value with changes in fair value reported in our Consolidated Statements of Income, the embedded derivative is generally required to be separated from the host contract and accounted for separately as at FVTPL if the economic characteristics and risks of the embedded derivative are not closely related to those of the host contract. 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.

When derivatives are used in sales and trading activities, the realized and unrealized gains and losses on these derivatives are recognized in Trading revenue in Non-interest income. Derivatives with positive fair values are reported as Derivative assets and derivatives with negative fair values are reported as Derivative liabilities. In accordance with our policy for offsetting financial assets and financial liabilities, the net fair value of certain derivative assets and liabilities are reported as an asset or liability, as appropriate. Valuation adjustments are included in the fair value of Derivative assets and Derivative liabilities. Premiums paid and premiums received are shown in Derivative assets and Derivative liabilities, respectively.

When derivatives are used to manage our own exposures, we determine for each derivative whether hedge accounting can be applied, as discussed in the Hedge accounting section below.

*Hedge accounting*

We use derivatives and non-derivatives in our hedging strategies to manage our exposure to interest rate, currency, credit and other market risks. Where hedge accounting can be applied, a hedge relationship is designated and documented at inception to detail the particular risk management objective and strategy for undertaking the hedge transaction. The documentation identifies the specific asset, liability or anticipated cash flows being hedged, the risk that is being hedged, the type of hedging instrument used and how effectiveness will be assessed. We assess, both at the inception of the hedge and on an ongoing basis, whether the hedging instruments are 'highly effective' in offsetting changes in the fair value or cash flows of the hedged items. A hedge is regarded as highly effective only if the following criteria are met: (i) at inception of the hedge and throughout its life, the hedge is expected to be highly effective in achieving offsetting changes in fair value or cash flows attributable to the hedged risk, and (ii) actual results of the hedge are within a pre-determined range. In the case of hedging a forecast transaction, the transaction must have a high probability of occurring and must present an exposure to variations in cash flows that could ultimately affect the reported net profit or loss. Hedge accounting is discontinued when it is determined that the hedging instrument is no longer effective as a hedge, the hedging instrument is terminated or sold, upon the sale or early termination of the hedged item, or when the forecast transaction is no longer deemed highly probable. Refer to Note 8 for the fair value of derivatives and non-derivative instruments categorized by their hedging relationships, as well as derivatives that are not designated in hedging relationships.

*Fair value hedges*

In a fair value hedging relationship, the carrying value of the hedged item is adjusted for changes in fair value attributable to the hedged risk and recognized in Non-interest income. Changes in fair value of the hedged item, to the extent that the hedging relationship is effective, are offset by changes in the fair value of the hedging derivative, which are also recognized in Non-interest income. When hedge accounting is discontinued, the carrying value of the hedged item is no longer adjusted and the cumulative fair value adjustments to the carrying value of the hedged items are amortized to Net income over the remaining life of the hedged items.

We predominantly use interest rate swaps to hedge our exposure to changes in a fixed interest rate instrument's fair value caused by changes in interest rates.

*Cash flow hedges*

In a cash flow hedging relationship, the effective portion of the change in the fair value of the hedging derivative, net of taxes, is recognized in OCI while the ineffective portion is recognized in Non-interest income. When hedge accounting is discontinued, the cumulative amounts previously recognized in Other components of equity are reclassified to Net interest income during the periods when the variability in the cash flows of the hedged item affects Net interest income. Unrealized gains and losses on derivatives are reclassified immediately to Net income when the hedged item is sold or terminated early, or when the forecast transaction is no longer expected to occur.

We predominantly use interest rate swaps to hedge the variability in cash flows related to a variable-rate asset or liability.

*Net investment hedges*

In hedging a foreign currency exposure of a net investment in a foreign operation, the effective portion of foreign exchange gains and losses on the hedging instruments, net of applicable taxes, is recognized in OCI and the ineffective portion is recognized in Non-interest income. The amounts, or a portion thereof, previously recognized in Other components of equity are recognized in Net income on the disposal, or partial disposal, of the foreign operation.

We use foreign exchange contracts and foreign currency-denominated liabilities to manage our foreign currency exposures to net investments in foreign operations having a functional currency other than the Canadian dollar.

**Loans**

Loans are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market and which are not classified as AFS. Loans are initially recognized at fair value. When loans are issued at a market rate, fair value is represented by the cash advanced to the borrowers. Loans are subsequently measured at amortized cost using the effective interest method less impairment, unless we intend to sell them in the near future upon origination or they have been designated as at FVTPL, in which case they are carried at fair value.

We assess at each balance sheet date whether there is objective evidence that the loans (including debt securities reclassified as loans) are impaired. Evidence of impairment may include indications that the borrower is experiencing significant financial difficulty, probability of bankruptcy or other financial reorganization, as well as a measurable decrease in the estimated future cash flows evidenced by the adverse changes in the payments status of the borrower or economic conditions that correlate with defaults. Whenever a payment is 90 days past due, loans other than credit card balances and loans guaranteed or insured by a Canadian government (Federal or Provincial) or a Canadian government agency (collectively, Canadian government) are classified as impaired unless they are fully secured and collection efforts are reasonably expected to result in repayment of debt within 180 days of the loans becoming past due. Loans guaranteed by a Canadian government are classified as impaired when the loan is contractually 365 days in arrears. Credit card balances are written off when a payment is 180 days in arrears.

Assets acquired to satisfy loan commitments are recorded at their fair value less costs to sell. Fair value is determined based on either current market value where available or discounted cash flows. Any excess of the carrying value of the loan over the fair value of the assets acquired is recognized by a charge to Provision for credit losses.

Interest on loans is recognized in Interest income – Loans using the effective interest method. The estimated future cash flows used in this calculation include those determined by the contractual term of the asset, all fees that are considered to be integral to the effective interest rate, transaction costs and all other premiums or discounts. Fees that relate to activities such as originating, restructuring or renegotiating loans are deferred and recognized as Interest income over the expected term of such loans using the effective interest method. Where there is a reasonable expectation that a loan will be originated, commitment and standby fees are also recognized as interest income over the expected term of the resulting loans using the effective interest method. Otherwise, such fees are recorded as other liabilities and amortized into Non-interest income over the commitment or standby period. Prepayment fees on mortgage loans are not included as part of the effective interest rate at origination as the amounts are not reliably measurable. If prepayment fees are received on a renewal of a mortgage loan, the fee is included as part of the effective interest rate, and if not renewed, the prepayment fee is recognized in interest income at the prepayment date.

**Allowance for credit losses**

An allowance for credit losses is established if there is objective evidence that we will be unable to collect all amounts due on our loans portfolio according to the original contractual terms or the equivalent value. This portfolio includes on-balance sheet exposures, such as loans and acceptances, and off-balance sheet items such as letters of credit, guarantees and unfunded commitments.

The allowance for credit losses is increased by the impairment losses recognized and decreased by the amount of write-offs, net of recoveries. The allowance for credit losses for on-balance sheet items is included as a reduction to assets, and the allowance for credit losses relating to off-balance sheet items is included in Provisions under Other Liabilities.

We assess whether objective evidence of impairment exists individually for loans that are individually significant and collectively for loans that are not individually significant. If we determine that no objective evidence of impairment exists for an individually assessed loan, whether significant or not, the loan is included in a group of loans with similar credit risk characteristics and collectively assessed for impairment. Loans that are individually assessed for impairment and for which an impairment loss is recognized are not included in a collective assessment of impairment.

Allowance for credit losses represent management's best estimates of losses incurred in our loan portfolio at the balance sheet date. Management's judgment is required in making assumptions and estimations when calculating allowances on both individually and collectively assessed loans. The underlying assumptions and estimates used for both individually and collectively assessed loans can change from period to period and may significantly affect our results of operations.

*Individually assessed loans*

Loans which are individually significant are assessed individually for objective indicators of impairment. A loan is considered impaired when management determines that it will not be able to collect all amounts due according to the original contractual terms or the equivalent value.

Credit exposures of individually significant loans are evaluated based on factors including the borrower's overall financial condition, resources and payment record, and where applicable, the realizable value of any collateral. If there is evidence of impairment leading to an impairment loss, then the amount of the loss is determined as the difference between the carrying amount of the loan, including accrued interest, and the estimated recoverable amount. The estimated recoverable amount is measured as the present value of expected future cash flows discounted at the loan's original effective interest rate, including cash flows that may result from the realization of collateral less costs to sell. Individually-assessed impairment losses reduce the carrying amount of the loan through the use of an allowance account and the amount of the loss is recognized in Provision for credit losses in our Consolidated Statements of Income. Following impairment, interest income is recognized on the unwinding of the discount from the initial recognition of impairment.

Significant judgment is required in assessing evidence of impairment and estimation of the amount and timing of future cash flows when determining the impairment loss. When assessing objective evidence of impairment we primarily consider specific factors such as the financial condition of the borrower, borrower's default or delinquency in interest or principal payments, local economic conditions and other observable data. In determining the estimated recoverable amount we consider discounted expected future cash flows at the effective interest rate using a number of assumptions and inputs. Management judgment is involved when choosing these inputs and assumptions used such as the expected amount of the loan that will not be recovered and the cost of time delays in collecting principal and/or interest, and when estimating the value of any collateral held for which there may not be a readily accessible market. Changes in the amount expected to be recovered would have a direct impact on the Provision for credit losses and may result in a change in the Allowance for credit losses.

*Collectively assessed loans*

Loans which are not individually significant, or which are individually assessed and not determined to be impaired, are collectively assessed for impairment. For the purposes of a collective evaluation of impairment, loans are grouped on the basis of similar risk characteristics, taking into account loan type, industry, geographic location, collateral type, past due status and other relevant factors.

The collective impairment allowance is determined by reviewing factors including: (i) historical loss experience, which takes into consideration historical probabilities of default, loss given default and exposure at default, in portfolios of similar credit risk characteristics, and (ii) management's judgment on the level of impairment losses based on historical experience relative to the actual level as reported at the balance sheet date, taking into consideration the current portfolio credit quality trends, business and economic and credit conditions, the impact of policy and process changes, and other supporting factors. Future cash flows for a group of loans are collectively evaluated for impairment on the basis of the contractual cash flows of the loans in the group and historical loss experience for loans with credit risk characteristics similar to those in the group. Historical loss experience is adjusted based on current observable data to reflect the effects of current conditions that did not affect the period on which the historical loss experience is based and to remove the effects of conditions in the historical period that do not

currently exist. The methodology and assumptions used for estimating future cash flows are reviewed regularly to reduce any differences between loss estimates and actual loss experience. Collectively-assessed impairment losses reduce the carrying amount of the aggregated loan position through an allowance account and the amount of the loss is recognized in Provision for credit losses. Following impairment, interest income is recognized on the unwinding of the discount from the initial recognition of impairment.

The methodology and assumptions used to calculate collective impairment allowances are subject to uncertainty, in part because it is not practicable to identify losses on an individual loan basis due to the large number of individually insignificant loans in the portfolio. Significant judgment is required in assessing historical loss experience, the loss identification period and its relationship to current portfolios including delinquency, and loan balances; and current business, economic and credit conditions including industry specific performance, unemployment and country risks. Changes in these assumptions would have a direct impact on the Provision for credit losses and may result in changes in the related Allowance for credit losses.

*Write-off of loans*

Loans and the related impairment allowance for credit losses are written off, either partially or in full, when there is no realistic prospect of recovery. Where loans are secured, they are generally written off after receipt of any proceeds from the realization of the collateral. 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. For credit cards, the balances and related allowance for credit losses are written off when payment is 180 days in arrears. Personal loans are generally written off at 150 days past due.

**Derecognition of financial assets**

Our various securitization activities generally consist of the transfer of financial assets such as loans or packaged mortgage-backed securities (MBS) to independent structured entities or trusts that issue securities to investors.

Financial assets are derecognized from our Consolidated Balance Sheets when our contractual rights to the cash flows from the assets have expired, when we retain the rights to receive the cash flows of the assets but assume an obligation to pay those cash flows to a third party subject to certain pass-through requirements or when we transfer our contractual rights to receive the cash flows and substantially all of the risk and rewards of the assets have been transferred. When we retain substantially all of the risks and rewards of the transferred assets, the transferred assets are not derecognized from our Consolidated Balance Sheets and are accounted for as secured financing transactions. When we neither retain nor transfer substantially all risks and rewards of ownership of the assets, we derecognize the assets if control over the assets is relinquished. If we retain control over the transferred assets, we continue to recognize the transferred assets to the extent of our continuing involvement.

Management's judgment is applied in determining whether the contractual rights to the cash flows from the transferred assets have expired or whether we retain the rights to receive cash flows on the assets but assume an obligation to pay for those cash flows. We derecognize transferred financial assets if we transfer substantially all the risk and rewards of the ownership in the assets. When assessing whether we have transferred substantially all of the risk and rewards of the transferred assets, management considers the Bank's exposure before and after the transfer with the variability in the amount and timing of the net cash flows of the transferred assets. In transfers in which we retain the servicing rights, management has applied judgment in assessing the benefits of servicing against market expectations. When the benefits of servicing are greater than fair value, a servicing asset is recognized in Other assets in our Consolidated Balance Sheets. When the benefits of servicing are less than fair value, a servicing liability is recognized in Other liabilities in our Consolidated Balance Sheets.

**Derecognition of financial liabilities**

We derecognize a financial liability from our Consolidated Balance Sheets when our obligation specified in the contract expires, or is discharged or cancelled. We recognize the difference between the carrying amount of a financial liability transferred and the consideration paid in our Consolidated Statements of Income.

**Guarantees**

Financial guarantee contracts are contracts that contingently require us to make specified payments (in cash, other assets, our own shares or provision of services) to reimburse the holder for a loss it incurs because a specified debtor fails to make payment when due in accordance with the original or modified terms of a debt instrument. Liabilities are recognized on our Consolidated Balance Sheets at the inception of a guarantee for the fair value of the obligation undertaken in issuing the guarantee. Financial guarantees are subsequently remeasured at the higher of (i) the amount initially recognized and (ii) our best estimate of the present value of the expenditure required to settle the present obligation at the end of the reporting period.

If the financial guarantee contract meets the definition of a derivative, it is measured at fair value at each balance sheet date and reported under Derivatives on our Consolidated Balance Sheets.

**Insurance and segregated funds**

Premiums from long-duration contracts, primarily life insurance, are recognized when due in Non-interest income – Insurance premiums, investment and fee income. Premiums from short-duration contracts, primarily property and casualty, and fees for administrative services are recognized in Insurance premiums, investment and fee income over the related contract period. Unearned premiums of the short-duration contracts, representing the unexpired portion of premiums, are reported in Other liabilities. Investments made by our insurance operations are classified as AFS or loans and receivables, except for investments supporting the policy benefit liabilities on life and health insurance contracts and a portion of property and casualty contracts. These are designated as at FVTPL with changes in fair value reported in Insurance premiums, investment and fee income.

Insurance claims and policy benefit liabilities represent current claims and estimates for future insurance policy benefits. Liabilities for life insurance contracts are determined using the Canadian Asset Liability Method (CALM), which incorporates assumptions for mortality, morbidity, policy lapses and surrenders, investment yields, policy dividends, operating and policy maintenance expenses, and provisions for adverse deviation. These assumptions are reviewed at least annually and updated in response to actual experience and market conditions. Liabilities for property and casualty insurance represent estimated provisions for reported and unreported claims. Liabilities for life and property and casualty insurance are included in Insurance claims and policy benefit liabilities. Changes in Insurance claims and policy benefit liabilities are included in the Insurance policyholder benefits, claims and acquisition expense in our Consolidated Statements of Income in the period in which the estimates change.

Premiums ceded for reinsurance and reinsurance recoveries on policyholder benefits and claims incurred are reported in income and expense as appropriate. Reinsurance recoverables, which relate to paid benefits and unpaid claims, are included in Other assets.

Acquisition costs for new insurance business consist of commissions, premium taxes, certain underwriting costs and other costs that vary with the acquisition of new business. Deferred acquisition costs for life insurance products are implicitly recognized in Insurance claims and policy benefit liabilities by CALM. For property and casualty insurance, these costs are classified as Other assets and amortized over the policy term.

Segregated funds are lines of business in which we issue an insurance contract where the benefit amount is directly linked to the market value of the investments held in the underlying fund. The contractual arrangement is such that the underlying segregated fund assets are registered in our name but the segregated fund policyholders bear the risks and rewards of the funds' investment performance. Liabilities for these contracts are calculated based on contractual obligations using actuarial assumptions and are at least equivalent to the surrender or transfer value calculated by reference to the value of the relevant underlying funds or indices. Segregated funds' assets and liabilities are separately presented on our Consolidated Balance Sheets. As the segregated fund policyholders bear the risks and rewards of the funds' performance, investment income earned by the segregated funds and expenses incurred by the segregated funds are offset and are not separately presented in our Consolidated Statements of Income. Fee income we earn from segregated funds includes management fees, mortality, policy administration and surrender charges, and these fees are recorded in Non-interest income – Insurance premiums, investment and fee income. We provide minimum death benefit and maturity value guarantees on segregated funds. The liability associated with these minimum guarantees is recorded in Insurance claims and policy benefit liabilities.

Liability adequacy tests are performed for all insurance contract portfolios at each balance sheet date to ensure the adequacy of insurance contract liabilities. Current best estimates of future contractual cash flows, claims handling and administration costs, and investment returns from the assets backing the liabilities are taken into account in the tests. When the test results indicate that there is a deficiency in liabilities, the deficiency is charged immediately to our Consolidated Statements of Income by writing down the deferred acquisition costs in Other assets and/or increasing Insurance claims and policy benefit liabilities.

**Employee benefits – Pensions and other post-employment benefits**

Our defined benefit pension expense, which is included in Non-interest expense – Human resources, consists of the cost of employee pension benefits for the current year's service, net interest on the net defined benefit liability (asset), past service cost and gains or losses on settlement. Remeasurements of the net defined benefit liability, which comprise actuarial gains and losses and return on plan assets (excluding amounts included in net interest on the net defined benefit liability), are recognized immediately in OCI in the period in which they occur. Actuarial gains and losses comprise experience adjustments (the effects of differences between the previous actuarial assumptions and what has actually occurred), as well as the effects of changes in actuarial assumptions. Amounts recognized in OCI will not be reclassified subsequently to net income. Past service cost is the change in the present value of the defined benefit obligation resulting from a plan amendment or curtailment and is charged immediately to income.

For each defined benefit plan, we recognize the present value of our defined benefit obligations less the fair value of the plan assets as a defined benefit liability reported in Employee benefit liabilities on our Consolidated Balance Sheets. For plans where there is a net defined benefit asset, the amount is reported as an asset in Employee benefit assets on our Consolidated Balance sheets.

The calculation of defined benefit expenses and obligations requires significant judgment as the recognition is dependent on discount rates and various actuarial assumptions such as healthcare cost trend rates, projected salary increases, retirement age, and mortality and termination rates. Due to the long-term nature of these plans, such estimates and assumptions are subject to inherent risks and uncertainties. For our pension and other post-employment plans, the discount rate is determined by reference to market yields on high quality corporate bonds. Since the discount rate is based on currently available yields, and involves management's assessment of market liquidity, it is only a proxy for future yields. Actuarial assumptions, set in accordance with current practices in the respective countries of our plans, may differ from actual experience as country specific statistics are only estimates of future employee behaviour. These assumptions are determined by management and are reviewed by actuaries at least annually. Changes to any of the above assumptions may affect the amounts of benefits obligations, expenses and remeasurements that we recognize.

Our contributions to defined contribution plans are expensed when employees have rendered services in exchange for such contributions. Defined contribution plan expense is included in Non-interest expense – Human resources.

**Share-based compensation**

We offer share-based compensation plans to certain key employees and to our non-employee directors.

To account for stock options granted to employees, compensation expense is recognized over the applicable vesting period with a corresponding increase in equity. Fair value is determined by using option valuation models, which take into account the exercise price of the option, the current share price, the risk free interest rate, the expected volatility of the share price over the life of the option and other relevant factors. When the options are exercised, the exercise price proceeds together with the amount initially recorded in equity are credited to common shares. Our other compensation plans include performance deferred share plans and deferred share unit plans for key employees (the Plans). The obligations for the Plans are accrued over their vesting periods. The Plans are settled in cash.

For cash-settled awards, our accrued obligations are adjusted to their fair value at each balance sheet date. For share-settled awards, our accrued obligations are based on the fair value of our common shares at the date of grant. Changes in our obligations, net of related hedges, are recorded as Non-interest expense – Human resources in our Consolidated Statements of Income with a corresponding increase in Other liabilities for cash-settled awards and in Retained earnings for share-settled awards.

The compensation cost attributable to options and awards granted to employees who are eligible to retire or will become eligible to retire during the vesting period, is recognized immediately if the employee is eligible to retire on the grant date or over the period between the grant date and the date the employee becomes eligible to retire.

Our contributions to the employee savings and share ownership plans are expensed as incurred.

**Income taxes**

Income tax comprises current tax and deferred tax and is recognized in our Consolidated Statements of Income except to the extent that it relates to items recognized directly in equity, in which case it is recognized in equity.

Current income tax payable on profits is recognized as an expense based on the applicable tax laws in each jurisdiction in the period in which profits arise, calculated using tax rates enacted or substantively enacted by the balance sheet date. Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities for accounting and tax purposes. A deferred income tax asset or liability is determined for each temporary difference, except for earnings related to our subsidiaries, branches, associates and interests in joint ventures where the temporary differences will not reverse in the foreseeable future and we have the ability to control the timing of reversal. Deferred tax assets and liabilities are determined based on the tax rates that are expected to be in effect in the period that the asset is realized

or the liability is settled, based on tax rates and tax laws that have been enacted or substantively enacted at the balance sheet date. Current tax assets and liabilities are offset when they are levied by the same taxation authority on either the same taxable entity or different taxable entities within the same tax reporting group (which intends to settle on a net basis), and when there is a legal right to offset. Deferred tax assets and liabilities are offset when the same conditions are satisfied. Our Consolidated Statements of Income include items that are non-taxable or non-deductible for income tax purposes and, accordingly, this causes the income tax provision to be different from what it would be if based on statutory rates.

Deferred income taxes accumulated as a result of temporary differences and tax loss carryforwards are included in Other assets and Other liabilities. On a quarterly basis, we review our deferred income tax assets to determine whether it is probable that the benefits associated with these assets will be realized; this review involves evaluating both positive and negative evidence.

We are subject to income tax laws in various jurisdictions where we operate, and the complex tax laws are potentially subject to different interpretations by us and the relevant taxation authorities. Significant judgment is required in the interpretation of the relevant tax laws, and the determination of our tax provision which includes our best estimate of tax positions that are under audit or appeal by relevant taxation authorities. We perform a review on a quarterly basis to incorporate our best assessment based on information available, but additional liability and income tax expense could result based on decisions made by the relevant tax authorities.

The determination of our deferred tax asset or liability also requires significant management judgment as the recognition is dependent on our projection of future taxable profits and tax rates that are expected to be in effect in the period the asset is realized or the liability is settled. Any changes in our projection will result in changes in deferred tax assets or liabilities on our Consolidated Balance Sheets, and also deferred tax expense in our Consolidated Statements of Income.

**Business combinations, goodwill and other intangibles**

All business combinations are accounted for using the acquisition method. Non-controlling interests, if any, are recognized at their proportionate share of the fair value of identifiable assets and liabilities, unless otherwise indicated. Identifiable intangible assets are recognized separately from goodwill and included in Other intangibles. Goodwill represents the excess of the price paid for the business acquired over the fair value of the net identifiable assets acquired on the date of acquisition.

**Goodwill**

Goodwill is allocated to cash-generating units or groups of cash-generating units (CGU) for the purpose of impairment testing, which is undertaken at the lowest level at which goodwill is monitored for internal management purposes. Impairment testing is performed annually as at August 1, or more frequently if there are objective indicators of impairment, by comparing the recoverable amount of a CGU with its carrying amount. The recoverable amount of a CGU is the higher of its value in use and its fair value less costs of disposal. Value in use is the present value of the expected future cash flows from a CGU. Fair value less costs of disposal is the amount obtainable from the sale of a CGU in an orderly transaction between market participants, less disposal costs. The fair value of a CGU is estimated using valuation techniques such as a discounted cash flow method, adjusted to reflect the considerations of a prospective third-party buyer. External evidence such as binding sale agreements or recent transactions for similar businesses within the same industry is considered to the extent that it is available.

Significant judgment is involved in estimating the model inputs used to determine the recoverable amount of our CGU, in particular future cash flows, discount rates and terminal growth rates, due to the uncertainty in the timing and amount of cash flows and the forward-looking nature of these inputs. Future cash flows are based on financial plans agreed by management which are estimated based on forecast results, business initiatives, planned capital investments and returns to shareholders. Discount rates are based on the bank-wide cost of capital, adjusted for CGU-specific risks and currency exposure as reflected by differences in expected inflation. Bank-wide cost of capital is based on the Capital Asset Pricing Model. CGU-specific risks include country risk, business/operational risk, geographic risk (including political risk, devaluation risk, and government regulation), currency risk, and price risk (including product pricing risk and inflation). Terminal growth rates reflect the expected long-term gross domestic product growth and inflation for the countries within which the CGU operates. Changes in these assumptions may impact the amount of impairment loss recognized in Non-interest expense.

The carrying amount of a CGU includes the carrying amount of assets, liabilities and goodwill allocated to the CGU. If the recoverable amount is less than the carrying value, the impairment loss is allocated first to reduce the carrying amount of any goodwill allocated to the CGU and then to the other non-financial assets of the CGU proportionately based on the carrying amount of each asset. Any impairment loss is charged to income in the period in which the impairment is identified. Goodwill is stated at cost less accumulated impairment losses. Subsequent reversals of goodwill impairment are prohibited.

Upon disposal of a portion of a CGU, the carrying amount of goodwill relating to the portion of the CGU sold is included in the determination of gains or losses on disposal. The carrying amount is determined based on the relative fair value of the disposed portion to the total CGU.

**Other intangibles**

Intangible assets represent identifiable non-monetary assets and are acquired either separately or through a business combination, or generated internally. Intangible assets acquired through a business combination are recognized separately from goodwill when they are separable or arise from contractual or other legal rights, and their fair value can be measured reliably. The cost of a separately acquired intangible asset includes its purchase price and directly attributable costs of preparing the asset for its intended use. 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. Research and development costs that are not eligible for capitalization are expensed. After initial recognition, an intangible asset is carried at its cost less any accumulated amortization and accumulated impairment losses, if any. Intangible assets with a finite-life are amortized on a straight-line basis over their estimated useful lives as follows: computer software – 3 to 10 years; and customer relationships – 10 to 20 years. We do not have any intangible assets with indefinite lives.

Intangible assets are assessed for indicators of impairment at each reporting period. If there is an indication that an intangible asset may be impaired, an impairment test is performed by comparing the carrying amount of the intangible asset to its recoverable amount. Where it is not possible to estimate the recoverable amount of an individual asset, we estimate the recoverable amount of the CGU to which the asset belongs. If the recoverable amount of the asset (or CGU) is less than its carrying amount, the carrying amount of the intangible asset is written down to its recoverable amount as an impairment loss.

An impairment loss recognized previously is reversed if there is a change in the estimates used to determine the recoverable amount of the asset (or CGU) since the last impairment loss was recognized. If an impairment loss is subsequently reversed, the carrying amount of the asset (or CGU) is revised to the lower of its recoverable amount and the carrying amount that would have been determined (net of amortization) had there been no prior impairment.

Due to the subjective nature of these estimates, significant judgment is required in determining the useful lives and recoverable amounts of our intangible assets, and assessing whether certain events or circumstances constitute objective evidence of impairment. Estimates of the recoverable amounts of our intangible assets rely on certain key inputs, including future cash flows and discount rates. Future cash flows are based on sales projections and allocated costs which are estimated based on forecast results and business initiatives. Discount rates are based on the bank-wide cost of capital, adjusted for asset-specific risks. Changes in these assumptions may impact the amount of impairment loss recognized in Non-interest expense.

**Other**

**Translation of foreign currencies**

Monetary assets and liabilities denominated in foreign currencies, are translated into Canadian dollars at rates prevailing at the balance sheet date. Foreign exchange gains and losses resulting from the translation and settlement of these items are recognized in Non-interest income in the Consolidated Statements of Income.

Non-monetary assets and liabilities that are measured at historical cost are translated into Canadian dollars at historical rates. Non-monetary financial assets classified as AFS securities, such as equity instruments, that are measured at fair value are translated into Canadian dollars at rates prevailing at the balance sheet date, and the resulting foreign exchange gains and losses are recorded in Other components of equity until the asset is sold or becomes impaired.

Assets and liabilities of our foreign operations with functional currencies other than Canadian dollars are translated into Canadian dollars at rates prevailing at the balance sheet date, and income and expenses of these foreign operations are translated at average rates of exchange for the reporting period.

Unrealized gains or losses arising as a result of the translation of our foreign operations along with the effective portion of related hedges are reported in Other components of equity on an after-tax basis. Upon disposal or partial disposal of a foreign operation, an appropriate portion of the accumulated net translation gains or losses is included in Non-interest income.

**Premises and equipment**

Premises and equipment includes land, buildings, leasehold improvements, computer equipment, furniture, fixtures and other equipment, and are stated at cost less accumulated depreciation, except for land which is not depreciated, and accumulated impairment losses. Cost comprises the purchase price, any costs directly attributable to bringing the asset to the location and condition necessary for its intended use, and the initial estimate of any disposal costs. Depreciation is recorded principally on a straight–line basis over the estimated useful lives of the assets, which are 25 to 50 years for buildings, 3 to 10 years for computer equipment, and 7 to 10 years for furniture, fixtures and other equipment. The amortization period for leasehold improvements is the lesser of the useful life of the leasehold improvements or the lease term plus the first renewal period, if reasonably assured of renewal, up to a maximum of 10 years. Depreciation methods, useful lives, and residual values are reassessed at each reporting period and adjusted as appropriate. Gains and losses on disposal are recorded in Non-interest income.

Premises and equipment are assessed for indicators of impairment at each reporting period. If there is an indication that an asset may be impaired, an impairment test is performed by comparing the asset's carrying amount to its recoverable amount. Where it is not possible to estimate the recoverable amount of an individual asset, we estimate the recoverable amount of the CGU to which the asset belongs and test for impairment at the CGU level. An impairment charge is recorded to the extent the recoverable amount of an asset (or CGU), which is the higher of value in use and fair value less costs of disposal, is less than its carrying amount. Value in use is the present value of the future cash flows expected to be derived from the asset (or CGU). Fair value less costs of disposal is the amount obtainable from the sale of the asset (or CGU) in an orderly transaction between market participants, less costs of disposal.

After the recognition of impairment, the depreciation charge is adjusted in future periods to reflect the asset's revised carrying amount. If an impairment is later reversed, the carrying amount of the asset is revised to the lower of the asset's recoverable amount and the carrying amount that would have been determined (net of depreciation) had there been no prior impairment loss. The depreciation charge in future periods is adjusted to reflect the revised carrying amount.

**Provisions**

Provisions are liabilities of uncertain timing or amount and are recognized when we have a present legal or constructive obligation as a result of a past event, it is probable that an outflow of resources will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation. Provisions are measured as the best estimate of the consideration required to settle the present obligation at the reporting date. Significant judgment is required in determining whether a present obligation exists and in estimating the probability, timing and amount of any outflows. We record provisions related to litigation, asset retirement obligations, and the allowance for off-balance sheet and other items. Provisions are recorded under Other liabilities on our Consolidated Balance Sheets.

We are required to estimate the results of ongoing legal proceedings, expenses to be incurred to dispose of capital assets, and credit losses on undrawn commitments and guarantees. The forward-looking nature of these estimates requires us to use a significant amount of judgment in projecting the timing and amount of future cash flows. We record our provisions on the basis of all available information at the end of the reporting period and make adjustments on a quarterly basis to reflect current expectations. Should actual results differ from our expectations, we may incur expenses in excess of the provisions recognized.

When some or all of the economic benefits required to settle a provision are expected to be recovered from a third party, such as an insurer, a separate asset is recognized if it is virtually certain that reimbursement will be received.

**Commissions and fees**

Portfolio management and other management advisory and service fees are recognized based on the applicable service contracts. Fees related to provision of services including asset management, wealth management, financial planning and custody services that cover a specified service period, are recognized over the period in which the service is provided. Investment management and custodial fees are generally calculated as a percentage of daily or period-end net asset values, and are received monthly, quarterly, semi-annually or annually, depending on the terms of the contracts. Management fees are generally derived from assets under management (AUM) when our clients solicit the investment capabilities of an investment manager and administrative fees are derived from assets under administration (AUA) where the investment strategy is directed by the client or a designated third party manager. Performance-based fees, which are earned upon exceeding certain benchmarks or performance targets, are recognized only when the benchmark or performance targets are achieved. Fees such as underwriting fees and brokerage fees that are related to the provision of specific transaction type services are recognized when the service has been completed.

**Dividend income**
Dividend income is recognized when the right to receive payment is established. This is the ex-dividend date for listed equity securities, and usually the date when shareholders have approved the dividend for unlisted equity securities.

**Leasing**
A lease is an agreement whereby the lessor conveys to the lessee the right to use an asset for an agreed upon period of time in return for a payment or series of payments. A finance lease is a lease that transfers substantially all the risks and rewards incidental to ownership of the leased asset to the lessee, where title may or may not eventually be transferred. An operating lease is a lease other than a finance lease.

*Operating leases*
When we are the lessee in an operating lease, we record rental payments on a straight-line basis over the lease term in Non-interest expense.

*Finance leases*
When we are the lessee in a finance lease, we initially record both the leased asset and the related lease obligation in Premises and equipment, Other intangibles and Other liabilities on our Consolidated Balance Sheets at an amount equal to the fair value of the leased asset or, if lower, the present value of the minimum lease payments, each determined at the date of inception of the lease. Initial direct costs directly attributed to the lease are recognized as an asset under the finance lease.

**Earnings per share**
Earnings per share is computed by dividing Net income available to common shareholders by the weighted average number of common shares outstanding for the period. Net income available to common shareholders is determined after deducting dividend entitlements of preferred shareholders, any gains (losses) on redemption of preferred shares net of related income taxes and the net income attributable to non-controlling interests.

Diluted earnings per share reflects the potential dilution that could occur if additional common shares are assumed to be issued under securities or contracts that entitle their holders to obtain common shares in the future, to the extent such entitlement is not subject to unresolved contingencies. For contracts that may be settled in cash or in common shares at our option, diluted earnings per share is calculated based on the assumption that such contracts will be settled in shares. Income and expenses associated with these types of contracts are excluded from the Net income available to common shareholders, and the additional number of shares that would be issued is included in the diluted earnings per share calculation. These contracts include our convertible Preferred Shares and Trust Capital Securities with the conversion assumed to have taken place at the beginning of the period or on the date of issue, if later. For stock options whose exercise price is less than the average market price of our common shares, they are assumed to be exercised and the proceeds are used to repurchase common shares at the average market price for the period. The incremental number of common shares issued under stock options and repurchased from proceeds is included in the calculation of diluted earnings per share.

**Share capital**
We classify a financial instrument that we issue as a financial asset, financial liability or an equity instrument in accordance with the substance of the contractual arrangement.

Our common shares held by us are classified as treasury shares in equity and accounted for at weighted average cost. Upon the sale of treasury shares, the difference between the sale proceeds and the cost of the shares is recognized in Retained earnings. Financial instruments issued by us are classified as equity instruments when there is no contractual obligation to transfer cash or other financial assets. Incremental costs directly attributable to the issue of equity instruments are included in equity as a deduction from the proceeds, net of tax. Financial instruments that will be settled by a variable number of our common shares upon their conversion by the holders as well as the related accrued distributions are classified as liabilities on our Consolidated Balance Sheets. Dividends and yield distributions on these instruments are classified as Interest expense in our Consolidated Statements of Income.

**Future changes in accounting policy and disclosure**
The following standards have been issued, but are not yet effective for us. We are currently assessing the impact of adopting these standards on our Consolidated Financial Statements:

**IFRS 15 *Revenue from Contracts with Customers* (IFRS 15)**
In May 2014, the IASB issued IFRS 15 which establishes principles for reporting about the nature, amount, timing and uncertainty of revenue and cash flows arising from an entity's contracts with customers. The standard provides a single, principles based five-step model for revenue recognition to be applied to contracts with customers except for revenue arising from items such as financial instruments, insurance contracts and leases. In September 2015, the IASB amended IFRS 15 by deferring its effective date by one year. IFRS 15 will be effective for us on November 1, 2018.

**IFRS 9 *Financial Instruments* (IFRS 9)**
In July 2014, the IASB issued the complete version of IFRS 9, first issued in November 2009, which brings together the classification and measurement, impairment and hedge accounting phases of the IASB's project to replace IAS 39 *Financial Instruments: Recognition and Measurement* (IAS 39).

IFRS 9 introduces a principles-based approach to the classification of financial assets based on an entity's business model and the nature of the cash flows of the asset. All financial assets, including hybrid contracts, are measured as at FVTPL, fair value through OCI or amortized cost. For financial liabilities, IFRS 9 includes the requirements for classification and measurement previously included in IAS 39.

IFRS 9 also introduces an expected loss impairment model for all financial assets not as at FVTPL. The model has three stages: (1) on initial recognition, 12-month expected credit losses are recognized in profit or loss and a loss allowance is established; (2) if credit risk increases significantly and the resulting credit risk is not considered to be low, full lifetime expected credit losses are recognized; and (3) when a financial asset is considered impaired, interest revenue is calculated based on the carrying amount of the asset, net of the loss allowance, rather than its gross carrying amount.

Finally, IFRS 9 introduces a new hedge accounting model that aligns the accounting for hedge relationships more closely with an entity's risk management activities, permits hedge accounting to be applied more broadly to a greater variety of hedging instruments and risks and requires additional disclosures.

We adopted the own credit provisions of IFRS 9 in the second quarter of 2014. The remaining sections of IFRS 9 will be effective for us on November 1, 2017.

## Note 3 Fair value of financial instruments

**Carrying value and fair value of selected financial instruments**
The following tables provide a comparison of the carrying and fair values for each classification of financial instruments.

| (Millions of Canadian dollars) | As at October 31, 2015 | | | | | | |
|---|---|---|---|---|---|---|---|
| | Carrying value and fair value | | | Carrying value | Fair value | | |
| | Financial instruments classified as at FVTPL | Financial instruments designated as at FVTPL | Available-for-sale instruments measured at fair value | Financial instruments measured at amortized cost | Financial instruments measured at amortized cost | Total carrying amount | Total fair value |
| **Financial assets** | | | | | | | |
| Securities | | | | | | | |
| Trading | $ 148,939 | $ 9,764 | $ – | $ – | $ – | $158,703 | $158,703 |
| Available-for-sale (1) | – | – | 48,164 | 8,641 | 8,759 | 56,805 | 56,923 |
| | 148,939 | 9,764 | 48,164 | 8,641 | 8,759 | 215,508 | 215,626 |
| Assets purchased under reverse repurchase agreements and securities borrowed | – | 114,692 | – | 60,031 | 60,071 | 174,723 | 174,763 |
| Loans | | | | | | | |
| Retail | 166 | – | – | 346,795 | 348,513 | 346,961 | 348,679 |
| Wholesale | 1,280 | 1,327 | – | 122,655 | 121,316 | 125,262 | 123,923 |
| | 1,446 | 1,327 | – | 469,450 | 469,829 | 472,223 | 472,602 |
| Other | | | | | | | |
| Derivatives | 105,626 | – | – | – | – | 105,626 | 105,626 |
| Other assets (2) | – | 925 | – | 44,852 | 44,852 | 45,777 | 45,777 |
| **Financial liabilities** | | | | | | | |
| Deposits | | | | | | | |
| Personal | $ 69 | $ 16,828 | | $ 203,669 | $ 204,019 | $220,566 | $220,916 |
| Business and government (3) | – | 93,319 | | 362,259 | 363,305 | 455,578 | 456,624 |
| Bank (4) | – | 5,376 | | 15,707 | 15,713 | 21,083 | 21,089 |
| | 69 | 115,523 | | 581,635 | 583,037 | 697,227 | 698,629 |
| Other | | | | | | | |
| Obligations related to securities sold short | 47,658 | – | | – | – | 47,658 | 47,658 |
| Obligations related to assets sold under repurchase agreements and securities loaned | – | 73,362 | | 9,926 | 9,928 | 83,288 | 83,290 |
| Derivatives | 107,860 | – | | – | – | 107,860 | 107,860 |
| Other liabilities (5) | 192 | 13 | | 43,251 | 43,196 | 43,456 | 43,401 |
| Subordinated debentures | – | 112 | | 7,250 | 7,078 | 7,362 | 7,190 |

| (Millions of Canadian dollars) | As at October 31, 2014 | | | | | | |
|---|---|---|---|---|---|---|---|
| | Carrying value and fair value | | | Carrying value | Fair value | | |
| | Financial instruments classified as at FVTPL | Financial instruments designated as at FVTPL | Available-for-sale instruments measured at fair value | Financial instruments measured at amortized cost | Financial instruments measured at amortized cost | Total carrying amount | Total fair value |
| **Financial assets** | | | | | | | |
| Securities | | | | | | | |
| Trading | $ 141,217 | $ 10,163 | $ – | $ – | $ – | $151,380 | $151,380 |
| Available-for-sale (1) | – | – | 46,009 | 1,759 | 1,762 | 47,768 | 47,771 |
| | 141,217 | 10,163 | 46,009 | 1,759 | 1,762 | 199,148 | 199,151 |
| Assets purchased under reverse repurchase agreements and securities borrowed | – | 85,292 | – | 50,288 | 50,288 | 135,580 | 135,580 |
| Loans | | | | | | | |
| Retail | – | – | – | 333,045 | 334,475 | 333,045 | 334,475 |
| Wholesale | 1,337 | 2,278 | – | 98,569 | 98,461 | 102,184 | 102,076 |
| | 1,337 | 2,278 | – | 431,614 | 432,936 | 435,229 | 436,551 |
| Other | | | | | | | |
| Derivatives | 87,402 | – | – | – | – | 87,402 | 87,402 |
| Other assets (2) | – | 930 | – | 32,975 | 32,975 | 33,905 | 33,905 |
| **Financial liabilities** | | | | | | | |
| Deposits | | | | | | | |
| Personal | $ 112 | $ 13,289 | | $ 195,816 | $ 195,964 | $209,217 | $209,365 |
| Business and government (3) | – | 59,446 | | 327,214 | 328,328 | 386,660 | 387,774 |
| Bank (4) | – | 6,592 | | 11,631 | 11,636 | 18,223 | 18,228 |
| | 112 | 79,327 | | 534,661 | 535,928 | 614,100 | 615,367 |
| Other | | | | | | | |
| Obligations related to securities sold short | 50,345 | – | | – | – | 50,345 | 50,345 |
| Obligations related to assets sold under repurchase agreements and securities loaned | – | 58,411 | | 5,920 | 5,921 | 64,331 | 64,332 |
| Derivatives | 88,982 | – | | – | – | 88,982 | 88,982 |
| Other liabilities (5) | 20 | 30 | | 36,816 | 36,762 | 36,866 | 36,812 |
| Subordinated debentures | – | 106 | | 7,753 | 7,712 | 7,859 | 7,818 |

(1) Available-for-sale (AFS) securities include held-to-maturity securities that are recorded at amortized cost.
(2) The total carrying amount is comprised of Customers' liability under acceptances and financial instruments included in Other assets of $13.5 billion and $32.3 billion (October 31, 2014 – $11.5 billion and $22.4 billion), respectively.
(3) Business and government deposits include deposits from regulated deposit-taking institutions other than regulated banks.
(4) Bank deposits refer to deposits from regulated banks.
(5) The total carrying amount is comprised of Acceptances and financial instruments included in Other liabilities of $13.5 billion and $30 billion (October 31, 2014 – $11.5 billion and $25.4 billion), respectively.

**Loans and receivables designated as at fair value through profit or loss**

The following tables present information on loans and receivables designated as at FVTPL. For our loans and receivables designated as at FVTPL, we measure the change in fair value attributable to changes in credit risk as the difference between the total change in the fair value of the instrument during the period and the change in fair value calculated using the appropriate risk-free yield curves.

| | As at October 31, 2015 | | | | | | |
|---|---|---|---|---|---|---|---|
| (Millions of Canadian dollars) | **Carrying amount of loans and receivables designated as at FVTPL** | **Maximum exposure to credit risk** | **Extent to which credit derivatives or similar instruments mitigate credit risk** | **Changes in fair value for the year attributable to changes in credit risk for positions still held** | **Cumulative change in fair value attributable to changes in credit risk for positions still held** (1) | **Changes in fair value of credit derivatives or similar instruments for the year** | **Cumulative change in fair value of credit derivatives or similar instruments** (1) |
| Interest-bearing deposits with banks | **$ 15,717** | **$ 15,717** | **$ –** | **$ –** | **$ –** | **$ –** | **$ –** |
| Assets purchased under reverse repurchase agreements and securities borrowed | **114,692** | **114,692** | **–** | **–** | **–** | **–** | **–** |
| Loans – Wholesale | **1,327** | **1,327** | **–** | **10** | **–** | **3** | **3** |
| Other assets | **202** | **202** | **–** | **–** | **–** | **–** | **–** |
| | **$ 131,938** | **$ 131,938** | **$ –** | **$ 10** | **$ –** | **$ 3** | **$ 3** |

| | As at October 31, 2014 | | | | | | |
|---|---|---|---|---|---|---|---|
| (Millions of Canadian dollars) | Carrying amount of loans and receivables designated as at FVTPL | Maximum exposure to credit risk | Extent to which credit derivatives or similar instruments mitigate credit risk | Changes in fair value for the year attributable to changes in credit risk for positions still held | Cumulative change in fair value attributable to changes in credit risk for positions still held (1) | Changes in fair value of credit derivatives or similar instruments for the year | Cumulative change in fair value of credit derivatives or similar instruments (1) |
| Interest-bearing deposits with banks | $ 5,603 | $ 5,603 | $ – | $ – | $ – | $ – | $ – |
| Assets purchased under reverse repurchase agreements and securities borrowed | 85,292 | 85,292 | – | – | – | – | – |
| Loans – Wholesale | 2,278 | 2,278 | 242 | 4 | 5 | – | – |
| Other assets | 326 | 326 | – | – | – | – | – |
| | $ 93,499 | $ 93,499 | $ 242 | $ 4 | $ 5 | $ – | $ – |

(1) The cumulative change is measured from the initial recognition of the credit derivative or similar instruments.

**Liabilities designated as at fair value through profit or loss**

The following tables present the changes in the fair value of our financial liabilities designated as at FVTPL as well as their contractual maturity and carrying amounts. For our financial liabilities designated as at FVTPL, we measure the change in fair value attributable to changes in credit risk as the difference between the total change in the fair value of the instrument during the period and the change in the fair value attributable to changes in market conditions such as changes in benchmark interest rate or foreign exchange rate.

| | As at October 31, 2015 | | | | | |
|---|---|---|---|---|---|---|
| (Millions of Canadian dollars) | **Contractual maturity amount** | **Carrying value** | **Difference between carrying value and contractual maturity amount** | **Changes in fair value for the year attributable to changes in credit risk included in net income for positions still held** | **Changes in fair value for the year attributable to changes in credit risk included in other comprehensive income for positions still held** | **Cumulative change in fair value attributable to changes in credit risk for positions still held** (1) |
| Term deposits | | | | | | |
| Personal | **$ 16,595** | **$ 16,828** | **$ 233** | **$ –** | **$ (93)** | **$ (74)** |
| Business and government (2) | **93,225** | **93,319** | **94** | **–** | **(387)** | **(329)** |
| Bank (3) | **5,376** | **5,376** | **–** | **–** | **–** | **–** |
| | **115,196** | **115,523** | **327** | **–** | **(480)** | **(403)** |
| Obligations related to assets sold under repurchase agreements and securities loaned | **73,364** | **73,362** | **(2)** | **–** | **–** | **–** |
| Other liabilities | **13** | **13** | **–** | **–** | **–** | **–** |
| Subordinated debentures | **108** | **112** | **4** | **–** | **–** | **(3)** |
| | **$ 188,681** | **$189,010** | **$ 329** | **$ –** | **$ (480)** | **$ (406)** |

| | As at October 31, 2014 | | | | | |
|---|---|---|---|---|---|---|
| (Millions of Canadian dollars) | Contractual maturity amount | Carrying value | Difference between carrying value and contractual maturity amount | Changes in fair value for the year attributable to changes in credit risk included in net income for positions still held | Changes in fair value for the year attributable to changes in credit risk included in other comprehensive income for positions still held | Cumulative change in fair value attributable to changes in credit risk for positions still held (1) |
| Term deposits | | | | | | |
| Personal | $ 12,964 | $ 13,289 | $ 325 | $ – | $ 13 | $ 19 |
| Business and government (2) | 59,139 | 59,446 | 307 | – | 61 | 58 |
| Bank (3) | 6,592 | 6,592 | – | – | – | – |
| | 78,695 | 79,327 | 632 | – | 74 | 77 |
| Obligations related to assets sold under repurchase agreements and securities loaned | 58,413 | 58,411 | (2) | – | – | – |
| Other liabilities | 30 | 30 | – | – | – | – |
| Subordinated debentures | 101 | 106 | 5 | – | 3 | (3) |
| | $ 137,239 | $137,874 | $ 635 | $ – | $ 77 | $ 74 |

(1) The cumulative change is measured from the initial recognition of the liabilities designated as at FVTPL. For the year ended October 31, 2015, $3 million of fair value losses previously included in Other comprehensive income (OCI) relate to financial liabilities derecognized during the year (October 31, 2014 – $4 million).
(2) Business and government term deposits include deposits from regulated deposit-taking institutions other than regulated banks.
(3) Bank term deposits refer to deposits from regulated banks.

**Fair value of assets and liabilities measured on a recurring basis and classified using the fair value hierarchy**
The following tables present the financial instruments that are measured at fair value on a recurring basis and classified by the fair value hierarchy.

| (Millions of Canadian dollars) | As at October 31, 2015 | | | | | | As at October 31, 2014 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Fair value measurements using | | | Total gross fair value | Netting adjustments | Assets/ liabilities at fair value | Fair value measurements using | | | Total gross fair value | Netting adjustments | Assets/ liabilities at fair value |
| | Level 1 | Level 2 | Level 3 | | | | Level 1 | Level 2 | Level 3 | | | |
| **Financial assets** | | | | | | | | | | | | |
| **Interest bearing deposits with banks** | $ – | $ 15,717 | $ – | $ 15,717 | $ | $ 15,717 | $ – | $ 5,603 | $ – | $ 5,603 | $ | $ 5,603 |
| **Securities** | | | | | | | | | | | | |
| **Trading** | | | | | | | | | | | | |
| Canadian government debt (1) | | | | | | | | | | | | |
| Federal | 10,793 | 9,364 | – | 20,157 | | 20,157 | 8,288 | 5,855 | – | 14,143 | | 14,143 |
| Provincial and municipal | – | 13,888 | 5 | 13,893 | | 13,893 | – | 11,371 | – | 11,371 | | 11,371 |
| U.S. state, municipal and agencies debt (1) | 1,641 | 32,798 | 16 | 34,455 | | 34,455 | 1,838 | 27,628 | 6 | 29,472 | | 29,472 |
| Other OECD government debt (2) | 3,131 | 9,215 | – | 12,346 | | 12,346 | 7,334 | 7,991 | – | 15,325 | | 15,325 |
| Mortgage-backed securities (1) | – | 2,907 | 15 | 2,922 | | 2,922 | – | 801 | 4 | 805 | | 805 |
| Asset-backed securities | | | | | | | | | | | | |
| CDO (3) | – | 67 | 5 | 72 | | 72 | – | 37 | 74 | 111 | | 111 |
| Non-CDO securities | – | 1,636 | 23 | 1,659 | | 1,659 | – | 1,040 | 364 | 1,404 | | 1,404 |
| Corporate debt and other debt | 16 | 24,502 | 191 | 24,709 | | 24,709 | 15 | 27,434 | 149 | 27,598 | | 27,598 |
| Equities | 45,811 | 2,556 | 123 | 48,490 | | 48,490 | 47,396 | 3,589 | 166 | 51,151 | | 51,151 |
| | 61,392 | 96,933 | 378 | 158,703 | | 158,703 | 64,871 | 85,746 | 763 | 151,380 | | 151,380 |
| **Available-for-sale** (4) | | | | | | | | | | | | |
| Canadian government debt (1) | | | | | | | | | | | | |
| Federal | 346 | 2,198 | – | 2,544 | | 2,544 | 429 | 11,540 | – | 11,969 | | 11,969 |
| Provincial and municipal | – | 1,600 | – | 1,600 | | 1,600 | – | 799 | – | 799 | | 799 |
| U.S. state, municipal and agencies debt (1) | – | 12,051 | 797 | 12,848 | | 12,848 | 29 | 4,839 | 1,389 | 6,257 | | 6,257 |
| Other OECD government debt | 4,752 | 7,535 | – | 12,287 | | 12,287 | 6,979 | 7,303 | 11 | 14,293 | | 14,293 |
| Mortgage-backed securities (1) | – | 318 | – | 318 | | 318 | – | 138 | – | 138 | | 138 |
| Asset-backed securities | | | | | | | | | | | | |
| CDO | – | 1,510 | – | 1,510 | | 1,510 | – | 857 | 24 | 881 | | 881 |
| Non-CDO securities | – | 881 | 197 | 1,078 | | 1,078 | – | 381 | 182 | 563 | | 563 |
| Corporate debt and other debt | – | 12,372 | 1,757 | 14,129 | | 14,129 | – | 7,714 | 1,573 | 9,287 | | 9,287 |
| Equities | 431 | 323 | 987 | 1,741 | | 1,741 | 140 | 514 | 1,028 | 1,682 | | 1,682 |
| Loan substitute securities | 94 | – | – | 94 | | 94 | 102 | 24 | – | 126 | | 126 |
| | 5,623 | 38,788 | 3,738 | 48,149 | | 48,149 | 7,679 | 34,109 | 4,207 | 45,995 | | 45,995 |
| **Assets purchased under reverse repurchase agreements and securities borrowed** | – | 114,692 | – | 114,692 | | 114,692 | – | 85,292 | – | 85,292 | | 85,292 |
| **Loans** | – | 2,301 | 472 | 2,773 | | 2,773 | – | 3,154 | 461 | 3,615 | | 3,615 |
| **Other** | | | | | | | | | | | | |
| **Derivatives** | | | | | | | | | | | | |
| Interest rate contracts | 7 | 142,096 | 374 | 142,477 | | 142,477 | 13 | 102,176 | 339 | 102,528 | | 102,528 |
| Foreign exchange contracts | – | 41,021 | 91 | 41,112 | | 41,112 | – | 33,761 | 48 | 33,809 | | 33,809 |
| Credit derivatives | – | 90 | 4 | 94 | | 94 | – | 244 | 10 | 254 | | 254 |
| Other contracts | 4,424 | 5,637 | 712 | 10,773 | | 10,773 | 3,238 | 4,839 | 560 | 8,637 | | 8,637 |
| Valuation adjustments | – | (1,265) | (38) | (1,303) | | (1,303) | – | (702) | (56) | (758) | | (758) |
| Total gross derivatives | 4,431 | 187,579 | 1,143 | 193,153 | | 193,153 | 3,251 | 140,318 | 901 | 144,470 | | 144,470 |
| Netting adjustments | | | | | (87,527) | (87,527) | | | | | (57,068) | (57,068) |
| Total derivatives | | | | | | 105,626 | | | | | | 87,402 |
| Other assets | 723 | 202 | – | 925 | | 925 | 604 | 326 | – | 930 | | 930 |
| | $ 72,169 | $ 456,212 | $ 5,731 | $ 534,112 | $ (87,527) | $ 446,585 | $ 76,405 | $ 354,548 | $ 6,332 | $ 437,285 | $ (57,068) | $ 380,217 |
| **Financial Liabilities** | | | | | | | | | | | | |
| **Deposits** | | | | | | | | | | | | |
| Personal | $ – | $ 16,508 | $ 389 | $ 16,897 | $ | $ 16,897 | $ – | $ 12,904 | $ 497 | $ 13,401 | $ | $ 13,401 |
| Business and government | – | 93,311 | 8 | 93,319 | | 93,319 | – | 59,376 | 70 | 59,446 | | 59,446 |
| Bank | – | 5,376 | – | 5,376 | | 5,376 | – | 6,592 | – | 6,592 | | 6,592 |
| **Other** | | | | | | | | | | | | |
| Obligations related to securities sold short | 31,945 | 15,713 | – | 47,658 | | 47,658 | 32,857 | 17,484 | 4 | 50,345 | | 50,345 |
| Obligations related to assets sold under repurchase agreements and securities loaned | – | 73,362 | – | 73,362 | | 73,362 | – | 58,411 | – | 58,411 | | 58,411 |
| Derivatives | | | | | | | | | | | | |
| Interest rate contracts | 3 | 135,455 | 820 | 136,278 | | 136,278 | 9 | 96,752 | 709 | 97,470 | | 97,470 |
| Foreign exchange contracts | – | 46,675 | 33 | 46,708 | | 46,708 | – | 35,664 | 39 | 35,703 | | 35,703 |
| Credit derivatives | – | 166 | 5 | 171 | | 171 | – | 327 | 15 | 342 | | 342 |
| Other contracts | 3,835 | 8,075 | 1,025 | 12,935 | | 12,935 | 2,886 | 8,537 | 1,062 | 12,485 | | 12,485 |
| Valuation adjustments | – | (281) | 9 | (272) | | (272) | – | (65) | 29 | (36) | | (36) |
| Total gross derivatives | 3,838 | 190,090 | 1,892 | 195,820 | | 195,820 | 2,895 | 141,215 | 1,854 | 145,964 | | 145,964 |
| Netting adjustments | | | | | (87,960) | (87,960) | | | | | (56,982) | (56,982) |
| Total derivatives | | | | | | 107,860 | | | | | | 88,982 |
| Other liabilities | 145 | 13 | 47 | 205 | | 205 | – | 30 | 20 | 50 | | 50 |
| Subordinated debentures | – | 112 | – | 112 | | 112 | – | 106 | – | 106 | | 106 |
| | $ 35,928 | $ 394,485 | $ 2,336 | $ 432,749 | $ (87,960) | $ 344,789 | $ 35,752 | $ 296,118 | $ 2,445 | $ 334,315 | $ (56,982) | $ 277,333 |

(1) As at October 31, 2015, residential and commercial MBS included in all fair value levels of trading securities were $10,315 million and $137 million (October 31, 2014 – $6,400 million and $81 million), respectively, and in all fair value levels of AFS securities, $3,394 million and $242 million (October 31, 2014 – $6,956 million and $34 million), respectively.
(2) OECD stands for Organisation for Economic Co-operation and Development.
(3) CDO stands for collateralized debt obligations.
(4) Excludes $15 million of AFS securities (October 31, 2014 – $14 million) that are carried at cost.

The following describes how fair values are determined, what inputs are used and where they are classified in the fair value hierarchy table above, for our significant assets and liabilities that are measured at fair value on a recurring basis:

*Government bonds (Canadian, U.S. and other OECD governments)*
Government bonds are included in Canadian government debt, U.S. state, municipal and agencies debt, Other Organisation for Economic Co-operation and Development (OECD) government debt and Obligations related to securities sold short in the fair value hierarchy table. The fair values of government issued or guaranteed debt securities in active markets are determined by reference to recent transaction prices, broker quotes, or third-party vendor prices and are classified as Level 1 in the fair value hierarchy. The fair values of securities that are not traded in active markets are based on either security prices, or valuation techniques using implied yields and risk spreads derived from prices of actively traded and similar government securities. Securities with observable prices or rate inputs as compared to transaction prices, dealer quotes or vendor prices are classified as Level 2 in the hierarchy. Securities where inputs are unobservable are classified as Level 3 in the hierarchy.

*Corporate and U.S. municipal bonds*
The fair values of corporate and U.S. municipal bonds, which are included in Corporate debt and other debt, U.S. state, municipal and agencies debt and Obligations related to securities sold short in the fair value hierarchy table, are determined using either recently executed transaction prices, broker quotes, pricing services, or in certain instances discounted cash flow method using rate inputs such as benchmark yields (Canadian Dealer Offered Rate, LIBOR and other similar reference rates) and risk spreads of comparable securities. Securities with observable prices or rate inputs are classified as Level 2 in the hierarchy. Securities where inputs are unobservable are classified as Level 3 in the hierarchy.

*Asset-backed securities and Mortgage-backed securities*
Asset-backed securities (ABS) and MBS are included in Asset-backed securities, Mortgage-backed securities, Canadian government debt, U.S. state, municipal and agencies debt, and Obligations related to securities sold short in the fair value hierarchy table. ABS include collateralized debt obligations (CDO). Inputs for valuation of MBS and CDO are, when available, traded prices, dealer or lead manager quotes, broker quotes and vendor prices of the identical securities. When prices of the identical securities are not readily available, we use industry standard models with inputs such as discount margins, yields, default, prepayment and loss severity rates that are implied from transaction prices, dealer quotes or vendor prices of comparable instruments. Where security prices and inputs are observable, ABS and MBS are classified as Level 2 in the hierarchy. Otherwise, they are classified as Level 3 in the hierarchy.

*Auction rate securities*
Auction rate securities (ARS) are included in U.S. state, municipal and agencies debt, and Asset-backed securities in the fair value hierarchy table. The valuation of ARS involves discounting forecasted cash flows from the underlying student loan collateral and incorporating multiple inputs such as default, prepayment, deferment and redemption rates, and credit spreads. These inputs are unobservable, and therefore, ARS are classified as Level 3 in the hierarchy. All relevant data must be assessed and significant judgment is required to determine the appropriate valuation inputs.

*Equities*
Equities and Obligations related to securities sold short in the fair value hierarchy table consist of listed and unlisted common shares, private equities and hedge funds with certain redemption restrictions. The fair values of common shares are based on quoted prices in active markets, where available, and are classified as Level 1 in the hierarchy. Where quoted prices in active markets are not readily available, fair value is determined based on quoted market prices for similar securities or through valuation techniques, including multiples of earnings and discounted cash flow method with forecasted cash flows and discount rate as inputs. Private equities are classified as Level 3 in the hierarchy as their inputs are not observable. Hedge funds are valued using Net Asset Values (NAV). If we can redeem a hedge fund at NAV prior to the next quarter end, the fund is classified as Level 2 in the hierarchy. Otherwise, it is classified as Level 3 in the hierarchy.

*Derivatives*
The fair values of exchange-traded derivatives, such as interest rate and equity options and futures, are based on quoted market prices and are classified as Level 1 in the fair value hierarchy. OTC derivatives primarily consist of interest rate and cross currency swaps, interest rate options, foreign exchange forward contracts and options, and commodity options and swaps. The exchange-traded or OTC interest rate, foreign exchange and equity derivatives are included in Interest rate contracts, Foreign exchange contracts and Other contracts, respectively, in the fair value hierarchy table. The fair values of OTC derivatives are determined using valuation models when quoted market prices or third-party consensus pricing information are not available. The valuation models, such as discounted cash flow method or Black-Scholes option model, incorporate observable or unobservable inputs for interest and foreign exchange rates, equity and commodity prices (including indices), credit spreads, corresponding market volatility levels, and other market-based pricing factors. As previously discussed, other adjustments to fair value include bid-offer, CVA, FVA, OIS, parameter and model uncertainties, and unrealized gain or loss at inception of a transaction. A derivative instrument is classified as Level 2 in the hierarchy if observable market inputs are available or the unobservable inputs are not significant to the fair value. Otherwise, it is classified as Level 3 in the hierarchy.

*Securities borrowed or purchased under resale agreements and securities loaned or sold under repurchase agreements*
In the fair value hierarchy table, these instruments are included in Assets purchased under reverse repurchase agreements and securities borrowed, and Obligations related to assets sold under repurchase agreements and securities loaned. Fair value for these contracts is calculated using valuation techniques such as discounted cash flow method using interest rate curves as inputs. They are classified as Level 2 instruments in the hierarchy as the inputs are observable.

*Deposits*
A majority of our deposits are measured at amortized cost but we designated certain deposits as at FVTPL. These FVTPL deposits are composed of deposits taken, the issuance of certificates of deposits and promissory notes, interest rate and equity linked notes, and are included in Deposits in the fair value hierarchy table. The fair values for these instruments are determined using discounted cash flow method and derivative option valuation models. The inputs to the valuation models include benchmark yield curves, credit spreads, interest rates, interest rate and equity volatility, dividends and correlation, where applicable. They are classified as Level 2 or 3 instruments in the hierarchy, depending on the significance of the unobservable credit spreads, volatility, dividend and correlation rates.

**Quantitative information about fair value measurements using significant unobservable inputs (Level 3 Instruments)**
The following table presents fair values of our significant Level 3 financial instruments, valuation techniques used to determine their fair values, ranges and weighted averages of unobservable inputs.

As at October 31, 2015 (Millions of Canadian dollars, except for prices, percentages and ratios)

| Products | Reporting line in the fair value hierarchy table | Fair value Assets | Fair value Liabilities | Valuation techniques | Significant unobservable inputs (1) | Range of input values (2), (3) Low | High | Weighted average / Inputs distribution (4) |
|---|---|---|---|---|---|---|---|---|
| **Non-derivative financial instruments** | | | | | | | | |
| Asset-backed securities | | | | Price-based | Prices | n.a. | n.a. | n.a. |
| | Asset-backed securities | $ 48 | | Discounted cash flows | Discount margins | 3.43% | 13.10% | 8.27% |
| | Obligations related to securities sold short | | $ – | | Yields | 1.39% | 2.78% | 1.79% |
| | | | | | Default rates | –% | 5.00% | 2.50% |
| | | | | | Prepayment rates | –% | 30.00% | 15.00% |
| | | | | | Loss severity rates | 20.00% | 70.00% | 45.00% |
| Auction rate securities | | | | Discounted cash flows | Discount margins | 1.65% | 4.50% | 2.78% |
| | U.S. state, municipal and agencies debt | 699 | | | Default rates | 9.00% | 10.00% | 9.96% |
| | | | | | Prepayment rates | 4.00% | 8.00% | 4.35% |
| | Asset-backed securities | 177 | | | Recovery rates | 40.00% | 97.50% | 91.66% |
| Corporate debt | | | | Price-based | Prices | $ 47.61 | $ 164.29 | $ 96.57 |
| | Corporate debt and other debt | 198 | | Discounted cash flows | Yields | 2.98% | 8.00% | 3.89% |
| | Loans | 472 | | | Capitalization rates | 6.07% | 8.50% | 7.28% |
| | Obligations related to securities sold short | | – | | Liquidity discounts (5) | n.a. | n.a. | n.a. |
| Government debt and municipal bonds | | | | Price-based | Prices | $ 64.98 | $ 126.22 | $ 84.50 |
| | | | | Discounted cash flows | Yields | 0.27% | 31.37% | 3.89% |
| | Canadian government debt | 5 | | | | | | |
| | U.S. state, municipal and agencies debt | 114 | | | | | | |
| | Other OECD government debt | – | | | | | | |
| | Corporate debt and other debt | 1,750 | | | | | | |
| Bank funding and deposits | | | | Discounted cash flows | Funding spreads | n.a. | n.a. | n.a. |
| | Deposits | | – | | Interest rate (IR)-IR correlations | n.a. | n.a. | n.a. |
| | | | | | Foreign exchange (FX)-FX correlations | n.a. | n.a. | n.a. |
| | | | | | FX-IR correlations | n.a. | n.a. | n.a. |
| Private equities, hedge fund investments and related equity derivatives | | | | Market comparable | EV/EBITDA multiples | 4.67X | 15.50X | 7.38X |
| | Equities | 1,110 | | Price-based | P/E multiples | 9.40X | 22.40X | 12.14X |
| | | | | Discounted cash flows | | | | |
| | Derivative-related assets | 3 | | | EV/Rev multiples | 0.28X | 5.90X | 2.64X |
| | Derivative-related liabilities | | 218 | | Liquidity discounts (5) | 15.00% | 40.00% | 27.34% |
| | | | | | Discount rate | 12.00% | 17.00% | 16.46% |
| | | | | | Net asset values /prices (6) | n.a. | n.a. | n.a. |
| **Derivative financial instruments** | | | | | | | | |
| Interest rate derivatives and interest-rate-linked structured notes (7) | | | | Discounted cash flows | Interest rates | 2.25% | 2.27% | Even |
| | Derivative-related assets | 428 | | Option pricing model | CPI swap rates | 1.67% | 1.90% | Even |
| | Deposits | | – | | IR-IR correlations | 19.00% | 67.00% | Even |
| | Derivative-related liabilities | | 822 | | FX-IR correlations | 29.00% | 56.00% | Even |
| | | | | | FX-FX correlations | 68.00% | 68.00% | Even |
| | | | | | IR volatilities (8) | 0.11% | 6.11% | Middle |
| Equity derivatives and equity-linked structured notes (7) | | | | Discounted cash flows | Dividend yields | 0.01% | 29.09% | Lower |
| | Derivative-related assets | 559 | | Option pricing model | Equity (EQ)-EQ correlations | 13.90% | 96.90% | Middle |
| | Deposits | | 389 | | EQ-FX correlations | (69.10)% | 29.20% | Middle |
| | Derivative-related liabilities | | 569 | | EQ volatilities | 1.70% | 190.00% | Lower |
| **Other** (9) | | | | | | | | |
| | Mortgage-backed securities | 15 | | | | | | |
| | Corporate debt and other debt | – | | | | | | |
| | Derivative-related assets | 153 | | | | | | |
| | Deposits | | 8 | | | | | |
| | Derivative-related liabilities | | 283 | | | | | |
| | Other liabilities | | 47 | | | | | |
| Total | | $ 5,731 | $ 2,336 | | | | | |

As at October 31, 2014 (Millions of Canadian dollars, except for prices, percentages and ratios)

| | | Fair value | | | | Range of input values (2), (3) | | |
|---|---|---|---|---|---|---|---|---|
| Products | Reporting line in the fair value hierarchy table | Assets | Liabilities | Valuation techniques | Significant unobservable inputs (1) | Low | High | Weighted average / Inputs distribution (4) |
| **Non-derivative financial instruments** | | | | | | | | |
| Asset-backed securities | | | | Price-based | Prices | $ 53.70 | $ 90.50 | $ 75.92 |
| | Asset-backed securities | $ 478 | | Discounted cash flows | Discount margins | 0.70% | 9.48% | 5.09% |
| | Obligations related to securities sold short | | $ – | | Yields | 2.84% | 5.36% | 3.52% |
| | | | | | Default rates | 1.00% | 5.00% | 2.00% |
| | | | | | Prepayment rates | 15.00% | 30.00% | 20.00% |
| | | | | | Loss severity rates | 30.00% | 70.00% | 50.00% |
| Auction rate securities | | | | Discounted cash flows | Discount margins | 1.32% | 4.63% | 2.26% |
| | U.S. state, municipal and agencies debt | 979 | | | Default rates | 9.00% | 10.00% | 9.80% |
| | Asset-backed securities | 166 | | | Prepayment rates | 4.00% | 8.00% | 4.76% |
| | | | | | Recovery rates | 40.00% | 97.50% | 93.51% |
| Corporate debt | | | | Price-based | Prices | $ 2.50 | $ 119.52 | $ 97.86 |
| | Corporate debt and other debt | 100 | | Discounted cash flows | Yields | 2.75% | 7.50% | 3.84% |
| | Loans | 461 | | | Capitalization rates | 6.43% | 9.47% | 7.95% |
| | Obligations related to securities sold short | | 4 | | Liquidity discounts (5) | 10.00% | 10.00% | 10.00% |
| Government debt and municipal bonds | | | | Price-based | Prices | $ 67.38 | $ 100.00 | $ 96.24 |
| | Canadian government debt | – | | Discounted cash flows | Yields | 0.17% | 30.15% | 3.06% |
| | U.S. state, municipal and agencies debt | 416 | | | | | | |
| | Other OECD government debt | 11 | | | | | | |
| | Corporate debt and other debt | 1,616 | | | | | | |
| Bank funding and deposits | | | | Discounted cash flows | Funding spreads | n.a. | n.a. | n.a. |
| | Deposits | | 70 | | Interest rate (IR)-IR correlations | 19.00% | 67.00% | Even |
| | | | | | Foreign exchange (FX)-FX correlations | 68.00% | 68.00% | Even |
| | | | | | FX-IR correlations | 29.00% | 56.00% | Even |
| Private equities, hedge fund investments and related equity derivatives | | | | Market comparable | EV/EBITDA multiples | 4.00X | 10.80X | 8.73X |
| | Equities | 1,194 | | Price-based | P/E multiples | 8.79X | 15.70X | 11.79X |
| | Derivative-related assets | 11 | | Discounted cash flows | EV/Rev multiples | 0.45X | 7.50X | 4.97X |
| | Derivative-related liabilities | | 434 | | Liquidity discounts (5) | –% | 50.00% | 26.92% |
| | | | | | Discount rate | 12.00% | 17.00% | 14.78% |
| | | | | | Net asset values /prices (6) | n.a. | n.a. | n.a. |
| **Derivative financial instruments** | | | | | | | | |
| Interest rate derivatives and interest-rate-linked structured notes (7) | | | | Discounted cash flows | Interest rates | 2.96% | 2.98% | Even |
| | Derivative-related assets | 348 | | Option pricing model | CPI swap rates | 1.73% | 2.30% | Even |
| | Deposits | | – | | IR-IR correlations | 19.00% | 67.00% | Even |
| | Derivative-related liabilities | | 732 | | FX-IR correlations | 29.00% | 56.00% | Even |
| | | | | | FX-FX correlations | 68.00% | 68.00% | Even |
| | | | | | IR volatilities (8) | 26.28% | 28.28% | Even |
| Equity derivatives and equity-linked structured notes (7) | | | | Discounted cash flows | Dividend yields | 0.04% | 18.11% | Lower |
| | Derivative-related assets | 442 | | Option pricing model | Equity (EQ)-EQ correlations | 0.50% | 97.20% | Middle |
| | Deposits | | 497 | | EQ-FX correlations | (72.80)% | 53.20% | Middle |
| | Derivative-related liabilities | | 529 | | EQ volatilities | 1.00% | 172.00% | Lower |
| **Other** (9) | | | | | | | | |
| | Mortgage-backed securities | 4 | | | | | | |
| | Corporate debt and other debt | 6 | | | | | | |
| | Derivative-related assets | 100 | | | | | | |
| | Deposits | | – | | | | | |
| | Derivative-related liabilities | | 159 | | | | | |
| | Other liabilities | | 20 | | | | | |
| Total | | $6,332 | $ 2,445 | | | | | |

(1) The acronyms stand for the following: (i) Enterprise Value (EV); (ii) Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA); (iii) Price / Earnings (P/E); (iv) Revenue (Rev); and (v) Consumer Price Index (CPI).

(2) The low and high input values represent the actual highest and lowest level inputs used to value a group of financial instruments in a particular product category. These input ranges do not reflect the level of input uncertainty, but are affected by the different underlying instruments within the product category. The input ranges will therefore vary from period to period based on the characteristics of the underlying instruments held at each balance sheet date. Where provided, the weighted average of the input values is calculated based on the relative fair values of the instruments within the product category. The weighted averages for derivatives are not presented in the table as they would not provide a comparable metric; instead, distribution of significant unobservable inputs within the range for each product category is indicated in the table.

(3) Price-based inputs are significant for certain debt securities and are based on external benchmarks, comparable proxy instruments or pre-quarter-end trade data. For these instruments, the price input is expressed in dollars for each $100 par value. For example, with an input price of $105, an instrument is valued at a premium over its par value.

(4) The level of aggregation and diversity within each derivative instrument category may result in certain ranges of inputs being wide and inputs being unevenly distributed across the range. In the table, we indicated whether the majority of the inputs are concentrated toward the upper, middle, or lower end of the range, or evenly distributed throughout the range.

(5) Fair value of securities with liquidity discount inputs totalled $131 million (October 31, 2014 – $211 million).

(6) Net asset values (NAV) of a hedge fund is total fair value of assets less liabilities divided by the number of fund units. The NAV of the funds and the corresponding equity derivatives referenced to NAV are not considered observable as we cannot redeem certain of these hedge funds at NAV prior to the next quarter end. Private equities are valued based on NAV or valuation techniques. The range for NAV per unit or price per share has not been disclosed for the hedge funds or private equities due to the dispersion of prices given the diverse nature of the investments.

(7) The structured notes contain embedded equity or interest rate derivatives with unobservable inputs that are similar to those of the equity or interest rate derivatives.

(8) The reduction in the range of volatility inputs as at October 31, 2015 as compared to prior periods is due to the implementation of a valuation model which uses a different input convention.

(9) Other primarily includes certain insignificant instruments such as commodity derivatives, foreign exchange derivatives, credit derivatives, bank-owned life insurance and Bank funding and deposits.

n.a. not applicable

**Sensitivity to unobservable inputs and interrelationships between unobservable inputs**

*Yield, credit spreads/discount margins*
A financial instrument's yield is the interest rate used to discount future cash flows in a valuation model. An increase in the yield, in isolation, would result in a decrease in a fair value measurement and vice versa. A credit spread/discount margin is the difference between a debt instrument's yield and a benchmark instrument's yield. Benchmark instruments have high credit quality ratings, similar maturities and are often government bonds. The credit spread/discount margin therefore represents the discount rate used to determine the present value of future cash flows of an asset to reflect the market return required for uncertainty in the estimated cash flows. The credit spread/discount margin for an instrument forms part of the yield used in a discounted cash flow method. Generally, an increase in the credit spread or discount margin will result in a decrease in fair value, and vice versa.

*Funding spread*
Funding spreads are credit spreads specific to our funding or deposit rates. A decrease in funding spreads, on its own, will increase fair value of our liabilities, and vice versa.

*Default rates*
A default rate is the rate at which borrowers fail to make scheduled loan payments. A decrease in the default rate will typically increase the fair value of the loan, and vice versa. This effect will be significantly more pronounced for a non-government guaranteed loan than a government guaranteed loan.

*Prepayment rates*
A prepayment rate is the rate at which a loan will be repaid in advance of its expected amortization schedule. Prepayments change the future cash flows of a loan. An increase in the prepayment rate in isolation will result in an increase in fair value when the loan interest rate is lower than the then current reinvestment rate, and a decrease in the prepayment rate in isolation will result in a decrease in fair value when the loan interest rate is lower than the then current reinvestment rate. Prepayment rates are generally negatively correlated with interest rates.

*Recovery and loss severity rates*
A recovery rate is an estimation of the amount that can be collected in a loan default scenario. The recovery rate is the recovered amount divided by the loan balance due, expressed as a percentage. The inverse concept of recovery is loss severity. Loss severity is an estimation of the loan amount not collected when a loan defaults. The loss severity rate is the loss amount divided by the loan balance due, expressed as a percentage. Generally, an increase in the recovery rate or a decrease in the loss severity rate will increase the loan fair value, and vice versa.

*Capitalization rates*
A capitalization rate is a rate of return on a real estate property investment calculated by dividing a property's income by the property's value. A lower capitalization rate increases the property value, and vice versa.

*Volatility rates*
Volatility measures the potential variability of future prices and is often measured as the standard deviation of price movements. Volatility is an input to option pricing models used to value derivatives and issued structured notes. Volatility is used in valuing equity, interest rate, commodity and foreign exchange options. A higher volatility rate means that the underlying price or rate movements are more likely to occur. Higher volatility rates may increase or decrease an option's fair value depending on the option's terms. The determination of volatility rates is dependent on various factors, including but not limited to, the underlying's market price, the strike price and maturity.

*Dividend yields*
A dividend yield is the underlying equity's expected dividends expressed as an annual percentage of its price. Dividend yield is used as an input for forward equity price and option models. Higher dividend yields will decrease the forward price, and vice versa. A higher dividend yield will increase or decrease an option's value, depending on the option's terms.

*Correlation rates*
Correlation is the linear relationship between the movements in two different variables. Correlation is an input to the valuation of derivative contracts and issued structured notes when an instrument's payout is determined by correlated variables. When variables are positively correlated, an increase in one variable will result in an increase in the other variable. When variables are negatively correlated, an increase in one variable will result in a decrease in the other variable. The referenced variables can be within a single asset class or market (equity, interest rate, commodities, credit and foreign exchange) or between variables in different asset classes (equity to foreign exchange, or interest rate to foreign exchange). Changes in correlation will either increase or decrease a financial instrument's fair value depending on the terms of its contractual payout.

*Interest rates*
An interest rate is the percentage amount charged on a principal or notional amount. Increasing interest rates will decrease the discounted cash flow value of a financial instrument, and vice versa.

*Consumer Price Index swap rates*
A Consumer Price Index (CPI) swap rate is expressed as a percentage of an increase in the average price of a basket of consumer goods and services, such as transportation, food and medical care. An increase in the CPI swap rate will cause inflation swap payments to be larger, and vice versa.

*EV/EBITDA multiples, P/E multiples, EV/Rev multiples, and liquidity discounts*
Private equity valuation inputs include Enterprise Value / Earnings Before Interest, Taxes, Depreciation and Amortization (EV/EBITDA) multiples, Price / Earnings (P/E) multiples and Enterprise Value / Revenue (EV/Rev) multiples. These are used to calculate either enterprise value or share value of a company based on a multiple of earnings or revenue estimates. Higher multiples equate to higher fair values for all multiple types, and vice versa. A liquidity discount may be applied when few or no transactions exist to support the valuations.

*Interrelationships between unobservable inputs*
Unobservable inputs of ARS, including the above discount margin, default rate, prepayment rate, recovery and loss severity rates, may not be independent of each other. The discount margin of ARS can be affected by a change in default rate, prepayment rate, or recovery and loss severity rates. Discount margins will generally decrease when default rates decline or when recovery rates increase. Prepayments may cause fair value to either increase or decrease.

**Changes in fair value measurement for instruments measured on a recurring basis and categorized in Level 3**
The following tables present the changes in fair value measurements on a recurring basis for instruments included in Level 3 of the fair value hierarchy.

| | For the year ended October 31, 2015 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| (Millions of Canadian dollars) | Fair value November 1, 2014 | Total realized/ unrealized gains (losses) included in earnings | Total unrealized gains (losses) included in other comprehensive income (1) | Purchases of assets/ issuances of liabilities | Sales of assets/ settlements of liabilities and other (2) | Transfers into Level 3 | Transfers out of Level 3 | Fair value October 31, 2015 | Changes in unrealized gains (losses) included in earnings for assets and liabilities for the year ended October 31, 2015 for positions still held |
| **Assets** | | | | | | | | | |
| **Securities** | | | | | | | | | |
| **Trading** | | | | | | | | | |
| Canadian government debt | | | | | | | | | |
| Provincial and municipal | $ – | $ – | $ – | $ – | $ – | $ 5 | $ – | $ 5 | $ – |
| U.S. state, municipal and agencies debt | 6 | (1) | 1 | 40 | (30) | – | – | 16 | – |
| Other OECD government debt | – | – | – | – | – | 20 | (20) | – | – |
| Mortgage-backed securities | 4 | (4) | – | 25 | (27) | 30 | (13) | 15 | – |
| Asset-backed securities | | | | | | | | | |
| CDO | 74 | 24 | (18) | 102 | (146) | 13 | (44) | 5 | – |
| Non-CDO securities | 364 | (7) | 47 | 137 | (345) | 24 | (197) | 23 | (2) |
| Corporate debt and other debt | 149 | (1) | 5 | 93 | (143) | 211 | (123) | 191 | – |
| Equities | 166 | (29) | 24 | 16 | (75) | 45 | (24) | 123 | (28) |
| | 763 | (18) | 59 | 413 | (766) | 348 | (421) | 378 | (30) |
| **Available-for-sale** | | | | | | | | | |
| U.S. state, municipal and agencies debt | 1,389 | 7 | 157 | 136 | (846) | – | (46) | 797 | n.a. |
| Other OECD government debt | 11 | – | – | 4 | (2) | – | (13) | – | n.a. |
| Asset-backed securities | | | | | | | | | |
| CDO | 24 | – | 3 | 30 | – | – | (57) | – | n.a. |
| Non-CDO securities | 182 | (1) | 40 | – | (24) | – | – | 197 | n.a. |
| Corporate debt and other debt | 1,573 | – | 246 | 2,524 | (2,586) | 37 | (37) | 1,757 | n.a. |
| Equities | 1,028 | 105 | 65 | 52 | (225) | 17 | (55) | 987 | n.a. |
| | 4,207 | 111 | 511 | 2,746 | (3,683) | 54 | (208) | 3,738 | n.a. |
| **Loans – Wholesale** | 461 | (8) | 47 | 605 | (547) | 1 | (87) | 472 | – |
| **Other** | | | | | | | | | |
| Net derivative balances (3) | | | | | | | | | |
| Interest rate contracts | (370) | (89) | (2) | 37 | (7) | (11) | (4) | (446) | (15) |
| Foreign exchange contracts | 9 | 46 | 6 | 34 | (7) | 7 | (37) | 58 | 36 |
| Credit derivatives | (5) | (15) | (1) | – | 19 | (1) | 2 | (1) | (3) |
| Other contracts | (502) | (113) | (77) | 28 | 216 | (98) | 233 | (313) | 124 |
| Valuation adjustments | (85) | (3) | (2) | 1 | 45 | (3) | – | (47) | – |
| Other assets | – | – | – | – | – | – | – | – | – |
| | $ 4,478 | $ (89) | $ 541 | $ 3,864 | $ (4,730) | $ 297 | $ (522) | $ 3,839 | $ 112 |
| **Liabilities** | | | | | | | | | |
| **Deposits** | | | | | | | | | |
| Personal | $ (497) | $ 73 | $ (41) | $ (545) | $ 88 | $ (376) | $ 909 | $ (389) | $ 45 |
| Business and government | (70) | (5) | 1 | (78) | 51 | – | 93 | (8) | – |
| **Other** | | | | | | | | | |
| Obligations related to securities sold short | (4) | – | – | (11) | 15 | (1) | 1 | – | – |
| Other liabilities | (20) | (28) | (5) | – | 6 | – | – | (47) | (22) |
| Subordinated debentures | – | – | – | – | – | – | – | – | – |
| | $ (591) | $ 40 | $ (45) | $ (634) | $ 160 | $ (377) | $ 1,003 | $ (444) | $ 23 |

| (Millions of Canadian dollars) | Fair value November 1, 2013 | Total realized/ unrealized gains (losses) included in earnings | Total unrealized gains (losses) included in other comprehensive income (1) | Purchases of assets/ issuances of liabilities | Sales of assets/ settlements of liabilities and other (2) | Transfers into Level 3 | Transfers out of Level 3 | Fair value October 31, 2014 | Changes in unrealized gains (losses) included in earnings for assets and liabilities for the year ended October 31, 2014 for positions still held |
|---|---|---|---|---|---|---|---|---|---|
| | For the year ended October 31, 2014 | | | | | | | | |
| **Assets** | | | | | | | | | |
| **Securities** | | | | | | | | | |
| **Trading** | | | | | | | | | |
| Canadian government debt | | | | | | | | | |
| Provincial and municipal | $ – | $ – | $ – | $ – | $ – | $ – | $ – | $ – | $ – |
| U.S. state, municipal and agencies debt | 22 | – | 2 | 47 | (61) | 5 | (9) | 6 | 1 |
| Other OECD government debt | 370 | – | (4) | – | – | – | (366) | – | – |
| Mortgage-backed securities | 28 | (3) | 2 | 90 | (83) | 1 | (31) | 4 | – |
| Asset-backed securities | | | | | | | | | |
| CDO | 31 | 15 | (9) | 130 | (85) | 7 | (15) | 74 | 2 |
| Non-CDO securities | 260 | (2) | 20 | 2,083 | (1,984) | 16 | (29) | 364 | (5) |
| Corporate debt and other debt | 415 | (2) | 27 | 263 | (487) | 20 | (87) | 149 | – |
| Equities | 183 | 1 | 14 | 84 | (77) | 22 | (61) | 166 | – |
| | 1,309 | 9 | 52 | 2,697 | (2,777) | 71 | (598) | 763 | (2) |
| **Available-for-sale** | | | | | | | | | |
| U.S. state, municipal and agencies debt | 2,014 | – | 240 | – | (856) | – | (9) | 1,389 | n.a. |
| Other OECD government debt | – | – | – | 1 | 10 | – | – | 11 | n.a. |
| Asset-backed securities | | | | | | | | | |
| CDO | 103 | – | 9 | – | (36) | 24 | (76) | 24 | n.a. |
| Non-CDO securities | 180 | (4) | 23 | – | (17) | – | – | 182 | n.a. |
| Corporate debt and other debt | 1,673 | – | 130 | 1,760 | (1,921) | – | (69) | 1,573 | n.a. |
| Equities | 969 | 120 | 120 | 47 | (228) | – | – | 1,028 | n.a. |
| | 4,939 | 116 | 522 | 1,808 | (3,048) | 24 | (154) | 4,207 | n.a. |
| **Loans – Wholesale** | 414 | 3 | 32 | 31 | (19) | – | – | 461 | (22) |
| **Other** | | | | | | | | | |
| Net derivative balances (3) | | | | | | | | | |
| Interest rate contracts | (458) | (100) | (2) | 31 | (13) | 94 | 78 | (370) | (108) |
| Foreign exchange contracts | (117) | (28) | 3 | 3 | – | 2 | 146 | 9 | (18) |
| Credit derivatives | (5) | (31) | (2) | – | 33 | – | – | (5) | (5) |
| Other contracts | (869) | 43 | (54) | (103) | 93 | (169) | 557 | (502) | 20 |
| Valuation adjustments | (105) | 15 | (1) | – | (73) | – | 79 | (85) | 4 |
| Other assets | 11 | – | – | – | – | – | (11) | – | – |
| | $ 5,119 | $ 27 | $ 550 | $ 4,467 | $ (5,804) | $ 22 | $ 97 | $ 4,478 | $ (131) |
| **Liabilities** | | | | | | | | | |
| **Deposits** | | | | | | | | | |
| Personal | $ (1,043) | $ 11 | $ (54) | $ (560) | $ 184 | $ (299) | $ 1,264 | $ (497) | $ 20 |
| Business and government | (3,933) | (184) | (180) | (1,551) | 265 | – | 5,513 | (70) | (7) |
| **Other** | | | | | | | | | |
| Obligations related to securities sold short | (16) | 1 | (1) | (198) | 202 | – | 8 | (4) | – |
| Other liabilities | (3) | 29 | – | – | (50) | – | 4 | (20) | (22) |
| Subordinated debentures | (109) | – | (3) | – | – | – | 112 | – | – |
| | $ (5,104) | $ (143) | $ (238) | $ (2,309) | $ 601 | $ (299) | $ 6,901 | $ (591) | $ (9) |

(1) These amounts include the foreign currency translation gains or losses arising on consolidation of foreign subsidiaries relating to the Level 3 instruments, where applicable. The unrealized losses on AFS securities recognized in OCI were $5 million for the year ended October 31, 2015 (October 31, 2014 – gains of $152 million), excluding the translation gains or losses arising on consolidation.
(2) Other includes amortization of premiums or discounts recognized in net income.
(3) Net derivatives as at October 31, 2015 included derivative assets of $1,143 million (October 31, 2014 – $901 million) and derivative liabilities of $1,892 million (October 31, 2014 – $1,854 million).
n.a. not applicable

**Transfers between fair value hierarchy levels for instruments carried at fair value on a recurring basis**

Transfers between Level 1 and Level 2, and transfers into and out of Level 3 are assumed to occur at the end of the period. For an asset or a liability that transfers into Level 3 during the period, the entire change in fair value for the period is excluded from the Total realized/unrealized gains (losses) included in earnings column of the above reconciliation, whereas for transfers out of Level 3 during the period, the entire change in fair value for the period is included in the same column of the above reconciliation.

Transfers between Level 1 and Level 2 are dependent on whether fair value is obtained on the basis of quoted market prices in active markets (Level 1) as opposed to fair value estimated using observable inputs in a discounted cash flow method (Level 2). The following transfers occurred for the year ended October 31, 2015:

- From Level 1 to 2: $284 million of Trading Canadian government debt (October 31, 2014 – $nil); $1,988 million of Trading and AFS U.S. state, municipal and agencies debt (October 31, 2014 – $1,905 million); and $641 million of Obligations related to securities sold short (October 31, 2014 – $1,027 million).
- From Level 2 to 1: $128 million of Trading Canadian government debt; $331 million of Trading U.S. state, municipal and agencies debt; $840 million of Trading and AFS Equities; $412 million of AFS Other OECD government debt; and $61 million of Obligations related to securities sold short. There were no similar levelling changes in 2014.

During the year ended October 31, 2015, significant transfers into and out of Level 3 occurred due to changes in the observability of inputs and included:

- From Level 2 to 3 (decreased observability): $211 million of corporate bonds in Trading Corporate debt and other debt.
- From Level 3 to 2 (increased observability): (i) $201 million of net OTC equity options in Other contracts; (ii) $197 million of collateralized loan obligations in Trading Non-CDO securities; and (iii) $123 million of corporate bonds in Trading Corporate debt and other debt.

During the year ended October 31, 2015, significant transfers into and out of Level 3 also occurred as a result of changes in the significance of unobservable inputs on the fair value of instruments as follows:

- From Level 2 to 3 (significant impact): $314 million of equity-linked structured notes in Personal deposits.
- From Level 3 to 2 (no significant impact): $909 million of equity-linked structured notes in Personal deposits.

During the year ended October 31, 2014, significant transfers into and out of Level 3 occurred due to changes in the observability of inputs and included:

- From Level 2 to 3 (decreased observability): $139 million of equity-linked structured notes in Personal deposits.
- From Level 3 to 2 (increased observability): (i) $366 million of Other OECD government debt; (ii) $112 million of net Interest rate contracts; (iii) $149 million of net Foreign exchange contracts; (iv) $515 million of net Other contracts; (v) $185 million of equity-linked structured notes in Personal deposits; and (vi) $5,494 million of Business and government deposits.

During the year ended October 31, 2014, significant transfers into and out of Level 3 also occurred as a result of changes in the significance of unobservable inputs on the fair value of instruments as follows:

- From Level 3 to 2 (no significant impact): $1,071 million of equity-linked structured notes in Personal deposits.

**Total gains or losses of level 3 instruments recognized in earnings**

| | **For the year ended October 31, 2015** | | | | | |
|---|---|---|---|---|---|---|
| | **Total realized/unrealized gains (losses) included in earnings** | | | **Changes in unrealized gains (losses) included in earnings for assets and liabilities for the year for positions still held** | | |
| (Millions of Canadian dollars) | **Assets** | **Liabilities** | **Total** | **Assets** | **Liabilities** | **Total** |
| Non-interest income | | | | | | |
| Insurance premiums, investment and fee income | **$ (1)** | **$ –** | **$ (1)** | **$ –** | **$ –** | **$ –** |
| Trading revenue | **461** | **(605)** | **(144)** | **283** | **(145)** | **138** |
| Net gains on available-for-sale securities | **111** | **–** | **111** | **–** | **–** | **–** |
| Credit fees and Other | **(3)** | **(12)** | **(15)** | **(3)** | **–** | **(3)** |
| | **$ 568** | **$ (617)** | **$ (49)** | **$ 280** | **$ (145)** | **$ 135** |

| | For the year ended October 31, 2014 | | | | | |
|---|---|---|---|---|---|---|
| | Total realized/unrealized gains (losses) included in earnings | | | Changes in unrealized gains (losses) included in earnings for assets and liabilities for the year for positions still held | | |
| (Millions of Canadian dollars) | Assets | Liabilities | Total | Assets | Liabilities | Total |
| Non-interest income | | | | | | |
| Insurance premiums, investment and fee income | $ 1 | $ – | $ 1 | $ – | $ – | $ – |
| Trading revenue | 686 | (882) | (196) | 136 | (208) | (72) |
| Net gains on available-for-sale securities | 115 | – | 115 | – | – | – |
| Credit fees and Other | (3) | (33) | (36) | 11 | (79) | (68) |
| | $ 799 | $ (915) | $ (116) | $ 147 | $ (287) | $ (140) |

**Positive and negative fair value movement of Level 3 financial instruments from using reasonably possible alternative assumptions**

A financial instrument is classified as Level 3 in the fair value hierarchy if one or more of its unobservable inputs may significantly affect the measurement of its fair value. In preparing the financial statements, appropriate levels for these unobservable input parameters are chosen so that they are consistent with prevailing market evidence or management judgment. Due to the unobservable nature of the prices or rates, there may be uncertainty about valuation of these Level 3 financial instruments.

The following table summarizes the impact to fair values of Level 3 financial instruments using reasonably possible alternative assumptions. This sensitivity disclosure is intended to illustrate the potential impact of the relative uncertainty in the fair value of Level 3 financial instruments. In reporting the sensitivities below, we offset balances in instances where: (i) the move in valuation factor caused an offsetting positive and negative fair value movement, (ii) both offsetting instruments are in Level 3, and (iii) when exposures are managed and reported on a net basis. With respect to overall sensitivity, it is unlikely in practice that all reasonably possible alternative assumptions would simultaneously be realized.

| | As at | | | | | |
|---|---|---|---|---|---|---|
| | **October 31, 2015** | | | October 31, 2014 | | |
| (Millions of Canadian dollars) | **Level 3 fair value** | **Positive fair value movement from using reasonably possible alternatives** | **Negative fair value movement from using reasonably possible alternatives** | Level 3 fair value | Positive fair value movement from using reasonably possible alternatives | Negative fair value movement from using reasonably possible alternatives |
| **Securities** | | | | | | |
| **Trading** | | | | | | |
| Canadian government debt | | | | | | |
| Provincial and municipal | **$ 5** | **$ –** | **$ –** | $ – | $ – | $ – |
| U.S. state, municipal and agencies debt | **16** | **1** | **(1)** | 6 | – | – |
| Mortgage-backed securities | **15** | **1** | **(1)** | 4 | 1 | (1) |
| Asset-backed securities | **28** | **2** | **(3)** | 438 | 10 | (14) |
| Corporate debt and other debt | **191** | **2** | **(2)** | 149 | 2 | (2) |
| Equities | **123** | **–** | **–** | 166 | – | – |
| **Available-for-sale** | | | | | | |
| U.S. state, municipal and agencies debt | **797** | **12** | **(36)** | 1,389 | 23 | (57) |
| Other OECD government debt | **–** | **–** | **–** | 11 | – | – |
| Asset-backed securities | **197** | **11** | **(16)** | 206 | 12 | (18) |
| Corporate debt and other debt | **1,757** | **11** | **(11)** | 1,573 | 12 | (10) |
| Equities | **987** | **76** | **(33)** | 1,028 | 92 | (23) |
| **Loans** | **472** | **8** | **(23)** | 461 | 12 | (11) |
| **Derivatives** | **1,143** | **16** | **(10)** | 901 | 23 | (21) |
| | **$ 5,731** | **$ 140** | **$ (136)** | $ 6,332 | $ 187 | $ (157) |
| **Deposits** | **$ (397)** | **$ 13** | **$ (13)** | $ (567) | $ 14 | $ (14) |
| **Derivatives** | **(1,892)** | **33** | **(43)** | (1,854) | 38 | (59) |
| **Other** | | | | | | |
| Securities sold short, other liabilities and subordinated debentures | **(47)** | **–** | **–** | (24) | – | – |
| | **$ (2,336)** | **$ 46** | **$ (56)** | $ (2,445) | $ 52 | $ (73) |

**Sensitivity results**

As at October 31, 2015, the effects of applying other reasonably possible alternative assumptions to the Level 3 asset positions would be an increase of $140 million and a reduction of $136 million in fair value, of which $110 million and $87 million would be recorded in Other components of equity, respectively. The effects of applying these assumptions to the Level 3 liability positions would result in a decrease of $46 million and an increase of $56 million in fair value.

**Level 3 valuation inputs and approaches to developing reasonably possible alternative assumptions**

The following is a summary of the unobservable inputs used in the valuation of the Level 3 instruments and our approaches to developing reasonably possible alternative assumptions used to determine sensitivity.

| **Financial assets or liabilities** | **Sensitivity methodology** |
|---|---|
| Asset-backed securities, corporate debt, government debt and municipal bonds | Sensitivities are determined based on adjusting, plus or minus one standard deviation, the bid-offer spreads or input prices if a sufficient number of prices is received, or using high and low vendor prices as reasonably possible alternative assumptions. |
| Auction rate securities | Sensitivity of ARS is determined by decreasing the discount margin between 9% and 15% and increasing the discount margin between 18% and 30%, depending on the specific reasonable range of fair value uncertainty for each particular financial instrument's market. Changes to the discount margin reflect historical monthly movements in the student loan asset-backed securities market. |
| Private equities, hedge fund investments and related equity derivatives | Sensitivity of direct private equity investments is determined by (i) adjusting the discount rate by 2% when discounted cash flow method is used to determine fair value, (ii) adjusting the price multiples based on the range of multiples of comparable companies when price-based models are used, or (iii) using an alternative valuation approach. Net asset values of the private equity funds, hedge funds and related equity derivatives are provided by the fund managers, and as a result, there are no other reasonably possible alternative assumptions for these investments. |
| Interest rate derivatives | Sensitivities of interest rate and cross currency swaps are derived using plus or minus one standard deviation of the inputs, and an amount based on model and parameter uncertainty, where applicable. |
| Equity derivatives | Sensitivity of the Level 3 position is determined by shifting the unobservable model inputs by plus or minus one standard deviation of the pricing service market data including volatility, dividends or correlations, as applicable. |
| Bank funding and deposits | Sensitivities of deposits are calculated by shifting the funding curve by plus or minus certain basis points. |
| Structured notes | Sensitivities for interest-rate-linked and equity-linked structured notes are derived by adjusting inputs by plus or minus one standard deviation, and for other deposits, by estimating a reasonable move in the funding curve by plus or minus certain basis points. |

**Fair value for financial instruments that are carried at amortized cost and classified using the fair value hierarchy**
The following tables present fair values of financial instruments that are carried at amortized cost and classified by the fair value hierarchy.

| | As at October 31, 2015 | | | | | |
|---|---|---|---|---|---|---|
| | Fair value always approximates carrying value (1) | Fair value may not approximate carrying value | | | | |
| | | Fair value measurements using | | | | Total fair value |
| (Millions of Canadian dollars) | | Level 1 | Level 2 | Level 3 | Total | |
| Held-to-maturity securities (2) | $ – | $ 2 | $ 8,750 | $ 7 | $ 8,759 | $ 8,759 |
| Assets purchased under reverse repurchase agreements and securities borrowed | 39,587 | – | 20,484 | – | 20,484 | 60,071 |
| Loans | | | | | | |
| Retail | 67,330 | – | 276,661 | 4,522 | 281,183 | 348,513 |
| Wholesale | 5,525 | – | 110,816 | 4,975 | 115,791 | 121,316 |
| | 72,855 | – | 387,477 | 9,497 | 396,974 | 469,829 |
| Other assets | 43,889 | – | 583 | 380 | 963 | 44,852 |
| | 156,331 | 2 | 417,294 | 9,884 | 427,180 | 583,511 |
| Deposits | | | | | | |
| Personal | 148,570 | – | 54,400 | 1,049 | 55,449 | 204,019 |
| Business and government | 197,435 | – | 164,415 | 1,455 | 165,870 | 363,305 |
| Bank | 10,538 | – | 5,107 | 68 | 5,175 | 15,713 |
| | 356,543 | – | 223,922 | 2,572 | 226,494 | 583,037 |
| Obligations related to assets sold under repurchase agreements and securities loaned | 9,095 | – | 833 | – | 833 | 9,928 |
| Other liabilities | 38,344 | – | 381 | 4,471 | 4,852 | 43,196 |
| Subordinated debentures | – | – | 7,022 | 56 | 7,078 | 7,078 |
| | $ 403,982 | $ – | $ 232,158 | $ 7,099 | $ 239,257 | $ 643,239 |

| | As at October 31, 2014 | | | | | |
|---|---|---|---|---|---|---|
| | Fair value always approximates carrying value (1) | Fair value may not approximate carrying value | | | | |
| | | Fair value measurements using | | | | Total fair value |
| (Millions of Canadian dollars) | | Level 1 | Level 2 | Level 3 | Total | |
| Held-to-maturity securities (2) | $ – | $ 5 | $ 1,522 | $ 235 | $ 1,762 | $ 1,762 |
| Assets purchased under reverse repurchase agreements and securities borrowed | 29,198 | – | 21,090 | – | 21,090 | 50,288 |
| Loans | | | | | | |
| Retail | 65,766 | – | 264,335 | 4,374 | 268,709 | 334,475 |
| Wholesale | 5,603 | – | 89,643 | 3,215 | 92,858 | 98,461 |
| | 71,369 | – | 353,978 | 7,589 | 361,567 | 432,936 |
| Other assets | 28,224 | – | 4,546 | 205 | 4,751 | 32,975 |
| | 128,791 | 5 | 381,136 | 8,029 | 389,170 | 517,961 |
| Deposits | | | | | | |
| Personal | 139,209 | – | 55,924 | 831 | 56,755 | 195,964 |
| Business and government | 176,555 | – | 150,827 | 946 | 151,773 | 328,328 |
| Bank | 9,659 | – | 1,915 | 62 | 1,977 | 11,636 |
| | 325,423 | – | 208,666 | 1,839 | 210,505 | 535,928 |
| Obligations related to assets sold under repurchase agreements and securities loaned | 5,419 | – | 502 | – | 502 | 5,921 |
| Other liabilities | 27,280 | – | 5,699 | 3,783 | 9,482 | 36,762 |
| Subordinated debentures | – | – | 7,657 | 55 | 7,712 | 7,712 |
| | $ 358,122 | $ – | $ 222,524 | $ 5,677 | $ 228,201 | $ 586,323 |

(1) Certain financial instruments have not been assigned to a level as the carrying amount always approximates their fair values due to the short-term nature (instruments that are receivable or payable on demand, or with original maturity of three months or less) and insignificant credit risk.
(2) Included in Securities – Available-for-sale on the Consolidated Balance Sheets.

Fair values of financial assets and liabilities carried at amortized cost and disclosed in the table above are determined using the following valuation techniques and inputs.

*Held-to-maturity securities*
Fair values of Canadian Federal and OECD government bonds, and corporate bonds are based on quoted prices. Fair values of certain Non-OECD government bonds are based on vendor prices or the discounted cash flow method with yield curves of other countries' government bonds as inputs.

*Assets purchased under reverse repurchase agreements and securities borrowed, and Obligations related to assets sold under repurchase agreements and securities loaned*
Valuation methods used for the long-term instruments are described in the Fair value of assets and liabilities measured on a recurring basis and classified using the fair value hierarchy section of this note. The carrying values of short-term instruments generally approximate their fair values.

*Loans – Retail*
Retail loans include residential mortgages, personal and small business loans and credit cards. For residential mortgages, and personal and small business loans, we segregate the portfolio based on certain attributes such as product type, contractual interest rate, term to maturity and credit scores, if applicable. Fair values of these loans are determined by the discounted cash flow method using applicable inputs such as prevailing interest rates, contractual and posted client rates, client discounts, credit spreads, prepayment rates and loan-to-value ratio. Fair values of credit card receivables are also calculated based on a discounted cash flow method with portfolio yields, charge off and monthly payment rates as inputs. The carrying values of short-term and variable rate loans generally approximate their fair values.

*Loans – Wholesale*
Wholesale loans include Business, Bank and Sovereign loans. Where market prices are available, loans are valued based on market prices. Otherwise, fair value is determined by the discounted cash flow method using the following inputs: market interest rates and market based spreads of assets with similar credit ratings and terms to maturity, expected default frequency implied from credit default swap prices, if available, and relevant pricing information such as contractual rate, origination and maturity dates, redemption price, coupon payment frequency and date convention.

*Deposits*
Deposits are comprised of demand, notice, and term deposits which include senior deposit notes we have issued to provide us with long-term funding. Fair values of term deposits are determined by one of several valuation techniques: (i) for term deposits and similar instruments, we segregate the portfolio based on term to maturity. Fair values of these instruments are determined by the discounted cash flow method using inputs such as client rates for new sales of the corresponding terms; and (ii) for senior deposit notes, we use actual traded prices, vendor prices or the discounted cash flow method using a market interest rate curve and our funding spreads as inputs. The carrying values of short-term term deposits, and demand and notice deposits generally approximate their fair values.

*Other assets and Other liabilities*
Other assets and Other liabilities include receivables and payables relating to certain commodities and option premiums. Fair values of the commodity receivables and payables are calculated by the discounted cash flow method using applicable inputs such as market interest rates, counterparties' credit spreads, our funding spreads, commodity forward prices and spot prices. The option premium receivables and payables are valued by the discounted cash flow models using market interest rates as inputs.

*Subordinated debentures*
Fair values of Subordinated debentures are based on recent transaction prices.

## Note 4 Securities

**Carrying value of securities**

The following table presents the contractual maturities of the carrying values of financial instruments held at the end of the period:

| (Millions of Canadian dollars) | As at October 31, 2015 | | | | | | |
|---|---|---|---|---|---|---|---|
| | Term to maturity (1) | | | | | | |
| | Within 3 months | 3 months to 1 year | 1 year to 5 years | 5 years to 10 years | Over 10 years | With no specific maturity | Total |
| **Trading** (2) | | | | | | | |
| Canadian government debt | $ 2,310 | $ 9,737 | $ 9,755 | $ 3,618 | $ 8,630 | $ – | $ 34,050 |
| U.S. state, municipal and agencies debt | 1,450 | 12,867 | 7,906 | 3,056 | 9,176 | – | 34,455 |
| Other OECD government debt | 2,237 | 4,373 | 4,402 | 941 | 393 | – | 12,346 |
| Mortgage-backed securities | – | 20 | 42 | 33 | 2,827 | – | 2,922 |
| Asset-backed securities (3) | 90 | 64 | 263 | 846 | 468 | – | 1,731 |
| Corporate debt and other debt | | | | | | | |
| Bankers' acceptances | 104 | 1 | – | – | – | – | 105 |
| Certificates of deposit | 59 | 329 | 38 | 12 | 18 | – | 456 |
| Other (4) | 1,414 | 2,866 | 14,318 | 1,836 | 3,714 | – | 24,148 |
| Equities | – | – | – | – | – | 48,490 | 48,490 |
| | 7,664 | 30,257 | 36,724 | 10,342 | 25,226 | 48,490 | 158,703 |
| **Available-for-sale** (2) | | | | | | | |
| Canadian government debt | | | | | | | |
| Federal | | | | | | | |
| Amortized cost | 251 | 572 | 1,603 | 68 | 47 | – | 2,541 |
| Fair value | 251 | 574 | 1,605 | 68 | 46 | – | 2,544 |
| Yield (5) | 0.4% | 0.9% | 1.3% | 2.9% | 4.3% | – | 1.2% |
| Provincial and municipal | | | | | | | |
| Amortized cost | – | 11 | 1,271 | 64 | 253 | – | 1,599 |
| Fair value | – | 11 | 1,274 | 64 | 251 | – | 1,600 |
| Yield (5) | – | 3.3% | 1.8% | 3.1% | 4.2% | – | 2.2% |
| U.S. state, municipal and agencies debt | | | | | | | |
| Amortized cost | 379 | 2,563 | 161 | 304 | 9,533 | – | 12,940 |
| Fair value | 379 | 2,563 | 154 | 302 | 9,450 | – | 12,848 |
| Yield (5) | 0.2% | 0.6% | 5.7% | 1.6% | 2.3% | – | 1.9% |
| Other OECD government debt | | | | | | | |
| Amortized cost | 3,946 | 503 | 7,491 | 338 | – | – | 12,278 |
| Fair value | 3,947 | 503 | 7,501 | 336 | – | – | 12,287 |
| Yield (5) | 0.0% | 1.2% | 1.0% | 2.2% | – | – | 0.7% |
| Mortgage-backed securities | | | | | | | |
| Amortized cost | – | – | 57 | – | 258 | – | 315 |
| Fair value | – | – | 57 | – | 261 | – | 318 |
| Yield (5) | – | – | 1.8% | – | 1.9% | – | 1.9% |
| Asset-backed securities | | | | | | | |
| Amortized cost | – | 6 | 644 | 702 | 1,291 | – | 2,643 |
| Fair value | – | 6 | 650 | 710 | 1,222 | – | 2,588 |
| Yield (5) | – | 2.2% | 0.6% | 0.9% | 1.7% | – | 1.2% |
| Corporate debt and other debt | | | | | | | |
| Amortized cost | 1,164 | 1,603 | 10,545 | 369 | 490 | – | 14,171 |
| Fair value | 1,163 | 1,601 | 10,516 | 369 | 480 | – | 14,129 |
| Yield (5) | 1.2% | 1.9% | 1.7% | 3.9% | 4.4% | – | 1.8% |
| Equities | | | | | | | |
| Cost | – | – | – | – | – | 1,457 | 1,457 |
| Fair value | – | – | – | – | – | 1,756 | 1,756 |
| Loan substitute securities | | | | | | | |
| Cost | – | – | – | – | – | 95 | 95 |
| Fair value | – | – | – | – | – | 94 | 94 |
| Yield (5) | – | – | – | – | – | 5.1% | 5.1% |
| Amortized cost | 5,740 | 5,258 | 21,772 | 1,845 | 11,872 | 1,552 | 48,039 |
| Fair value | 5,740 | 5,258 | 21,757 | 1,849 | 11,710 | 1,850 | 48,164 |
| **Held-to-maturity** (2) | | | | | | | |
| Amortized cost | 889 | 334 | 3,175 | 4,133 | 110 | – | 8,641 |
| Fair value | 889 | 334 | 3,189 | 4,239 | 108 | – | 8,759 |
| **Total carrying value of securities** (2) | $ 14,293 | $ 35,849 | $ 61,656 | $ 16,324 | $ 37,046 | $ 50,340 | $ 215,508 |

| (Millions of Canadian dollars) | As at October 31, 2014<br>Term to maturity (1)<br>Within 3 months | 3 months to 1 year | 1 year to 5 years | 5 years to 10 years | Over 10 years | With no specific maturity | Total |
|---|---|---|---|---|---|---|---|
| **Trading** (2) | | | | | | | |
| Canadian government debt | $ 3,050 | $ 6,651 | $ 7,594 | $ 2,232 | $ 5,987 | $ – | $ 25,514 |
| U.S. state, municipal and agencies debt | 3,272 | 6,811 | 7,109 | 5,678 | 6,602 | – | 29,472 |
| Other OECD government debt | 1,637 | 3,205 | 6,223 | 1,594 | 2,666 | – | 15,325 |
| Mortgage-backed securities | – | 1 | 57 | 163 | 584 | – | 805 |
| Asset-backed securities (3) | 56 | 66 | 330 | 375 | 688 | – | 1,515 |
| Corporate debt and other debt | | | | | | | |
| Bankers' acceptances | 754 | 8 | – | – | – | – | 762 |
| Certificates of deposit | 17 | 342 | 574 | 30 | 17 | – | 980 |
| Other (4) | 470 | 5,501 | 13,093 | 3,004 | 3,788 | – | 25,856 |
| Equities | – | – | – | – | – | 51,151 | 51,151 |
| | 9,256 | 22,585 | 34,980 | 13,076 | 20,332 | 51,151 | 151,380 |
| **Available-for-sale** (2) | | | | | | | |
| Canadian government debt | | | | | | | |
| Federal | | | | | | | |
| Amortized cost | 626 | 615 | 8,195 | 2,197 | – | – | 11,633 |
| Fair value | 627 | 619 | 8,356 | 2,367 | – | – | 11,969 |
| Yield (5) | 1.8% | 2.8% | 2.2% | 3.3% | – | – | 2.4% |
| Provincial and municipal | | | | | | | |
| Amortized cost | – | – | 644 | 130 | 18 | – | 792 |
| Fair value | – | – | 648 | 131 | 20 | – | 799 |
| Yield (5) | – | – | 2.4% | 2.9% | 4.9% | – | 2.5% |
| U.S. state, municipal and agencies debt | | | | | | | |
| Amortized cost | 108 | 385 | 80 | 213 | 5,544 | – | 6,330 |
| Fair value | 108 | 383 | 81 | 213 | 5,472 | – | 6,257 |
| Yield (5) | 0.0% | 8.5% | 0.7% | 0.4% | 0.7% | – | 1.1% |
| Other OECD government debt | | | | | | | |
| Amortized cost | 5,663 | 2,138 | 6,357 | 117 | – | – | 14,275 |
| Fair value | 5,663 | 2,139 | 6,374 | 117 | – | – | 14,293 |
| Yield (5) | 0.1% | 0.2% | 0.9% | 0.4% | – | – | 0.5% |
| Mortgage-backed securities | | | | | | | |
| Amortized cost | – | – | – | 17 | 116 | – | 133 |
| Fair value | – | – | – | 17 | 121 | – | 138 |
| Yield (5) | – | – | – | 3.0% | 1.8% | – | 2.0% |
| Asset-backed securities | | | | | | | |
| Amortized cost | – | – | 381 | 833 | 277 | – | 1,491 |
| Fair value | – | – | 387 | 849 | 208 | – | 1,444 |
| Yield (5) | – | – | 0.6% | 0.5% | 1.0% | – | 0.6% |
| Corporate debt and other debt | | | | | | | |
| Amortized cost | 1,625 | 822 | 5,820 | 727 | 255 | – | 9,249 |
| Fair value | 1,628 | 823 | 5,840 | 739 | 257 | – | 9,287 |
| Yield (5) | 1.1% | 2.0% | 1.6% | 2.0% | 4.2% | – | 1.7% |
| Equities | | | | | | | |
| Cost | – | – | – | – | – | 1,333 | 1,333 |
| Fair value | – | – | – | – | – | 1,696 | 1,696 |
| Loan substitute securities | | | | | | | |
| Cost | – | – | – | – | – | 124 | 124 |
| Fair value | – | – | – | – | – | 126 | 126 |
| Yield (5) | – | – | – | – | – | 3.9% | 3.9% |
| Amortized cost | 8,022 | 3,960 | 21,477 | 4,234 | 6,210 | 1,457 | 45,360 |
| Fair value | 8,026 | 3,964 | 21,686 | 4,433 | 6,078 | 1,822 | 46,009 |
| **Held-to-maturity** (2) | | | | | | | |
| Amortized cost | 163 | 110 | 38 | 1,448 | – | – | 1,759 |
| Fair value | 163 | 110 | 40 | 1,449 | – | – | 1,762 |
| **Total carrying value of securities** (2) | $ 17,445 | $ 26,659 | $ 56,704 | $ 18,957 | $ 26,410 | $ 52,973 | $ 199,148 |

(1) Actual maturities may differ from contractual maturities shown above since borrowers may have the right to prepay obligations with or without prepayment penalties.
(2) Trading securities and AFS securities are recorded at fair value. Held-to-maturity securities are recorded at amortized cost.
(3) Includes CDO which are presented as Asset-backed securities – CDO in the table entitled Fair value of assets and liabilities measured on a recurring basis and classified using the fair value hierarchy in Note 3.
(4) Primarily composed of corporate debt, supra-national debt, and commercial paper.
(5) The weighted average yield is derived using the contractual interest rate and the carrying value at the end of the year for the respective securities.

**Unrealized gains and losses on available-for-sale securities** (1), (2)

| | As at | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **October 31, 2015** | | | | October 31, 2014 | | | |
| (Millions of Canadian dollars) | **Cost/ Amortized cost** | **Gross unrealized gains** | **Gross unrealized losses** | **Fair value** | Cost/ Amortized cost | Gross unrealized gains | Gross unrealized losses | Fair value |
| Canadian government debt | | | | | | | | |
| Federal | **$ 2,541** | **$ 7** | **$ (4)** | **$ 2,544** | $ 11,633 | $ 338 | $ (2) | $ 11,969 |
| Provincial and municipal | **1,599** | **8** | **(7)** | **1,600** | 792 | 8 | (1) | 799 |
| U.S. state, municipal and agencies debt (3) | **12,940** | **14** | **(106)** | **12,848** | 6,330 | 9 | (82) | 6,257 |
| Other OECD government debt | **12,278** | **24** | **(15)** | **12,287** | 14,275 | 19 | (1) | 14,293 |
| Mortgage-backed securities | **315** | **4** | **(1)** | **318** | 133 | 5 | – | 138 |
| Asset-backed securities | | | | | | | | |
| CDO | **1,506** | **12** | **(8)** | **1,510** | 857 | 26 | (2) | 881 |
| Non-CDO securities | **1,137** | **7** | **(66)** | **1,078** | 634 | 5 | (76) | 563 |
| Corporate debt and other debt | **14,171** | **39** | **(81)** | **14,129** | 9,249 | 49 | (11) | 9,287 |
| Equities | **1,457** | **314** | **(15)** | **1,756** | 1,333 | 369 | (6) | 1,696 |
| Loan substitute securities | **95** | **–** | **(1)** | **94** | 124 | 2 | – | 126 |
| | **$ 48,039** | **$ 429** | **$ (304)** | **$ 48,164** | $ 45,360 | $ 830 | $ (181) | $ 46,009 |

(1) Excludes $8,641 million of held-to-maturity securities as at October 31, 2015 (October 31, 2014 – $1,759 million) that are carried at amortized cost.
(2) The majority of the mortgage-backed securities (MBS) are residential. Cost/Amortized cost, gross unrealized gains, gross unrealized losses and fair value related to commercial MBS are $243 million, $nil, $1 million and $242 million, respectively as at October 31, 2015 (October 31, 2014 – $33 million, $1 million, $nil, and $34 million).
(3) Includes securities issued by U.S. non-agencies backed by government insured assets, MBS and asset-backed securities issued by U.S. government agencies.

AFS securities are assessed for objective evidence of impairment at each reporting date and more frequently when conditions warrant. Depending on the nature of the securities under review, we apply specific methodologies to assess whether the cost/amortized cost of the security would be recovered. As at October 31, 2015, our gross unrealized losses on AFS securities were $304 million (October 31, 2014 – $181 million). Management believes that there is no objective evidence of impairment on our AFS securities that are in an unrealized loss position as at October 31, 2015.

The decrease in cost/amortized cost, gross unrealized gains and fair value of Canadian Federal government debt as compared to October 31, 2014 is primarily due to the reclassification of financial instruments as described below.

**Net gains and losses on available-for-sale securities** (1)

| | For the year ended | | |
|---|---|---|---|
| (Millions of Canadian dollars) | **October 31 2015** | October 31 2014 | October 31 2013 |
| Realized gains | **$ 218** | $ 232 | $ 231 |
| Realized losses | **(20)** | (15) | (17) |
| Impairment losses | **(53)** | (25) | (26) |
| | **$ 145** | $ 192 | $ 188 |

(1) The following related to our insurance operations are excluded from Net gains on AFS securities and included in Insurance premiums, investment and fee income in the Consolidated Statements of Income for the year ended October 31, 2015: Realized gains of $22 million (October 31, 2014 – $12 million; October 31, 2013 – $3 million) and $6 million in impairment losses related to our insurance operations (October 31, 2014 – $nil; October 31, 2013 – $nil). There were no realized losses for the year ended October 31, 2015 (October 31, 2014 – $1 million; October 31, 2013 – $nil).

During the year ended October 31, 2015, $145 million of net gains were recognized in Non-interest income as compared to $192 million in the prior year. The current year reflects net realized gains of $198 million mainly comprised of distributions from, and gains on sales of certain Equities. Also included in the net gains are $53 million of impairment losses primarily on certain Equities and Loan substitute securities. This compares to net realized gains for the year ended October 31, 2014 of $217 million which was partially offset by $25 million of impairment losses.

**Held-to-maturity securities**
Held-to-maturity securities measured at amortized cost are subject to periodic impairment review and are classified as impaired when, in management's opinion, there is no longer reasonable assurance of the timely collection of the full amount of principal and interest. The impairment review of held-to-maturity securities is primarily based on the impairment model for loans. Management believes that there is no objective evidence of impairment on our held-to-maturity securities as at October 31, 2015.

**Reclassification of financial instruments**
On October 1, 2015, we reclassified certain debt securities from AFS to loans and receivables and from AFS to held-to-maturity with carrying amounts of $4,132 million and $5,240 million, respectively, as a result of a change in our intention to hold these securities until the foreseeable future or maturity. These debt securities were previously measured at fair value, with the increase in fair value recognized as part of the carrying amount (fair value premium) and in OCI. Upon reclassification, the previous carrying amount of these AFS securities became the new amortized cost of the loans and receivables and held-to-maturity securities. The net unrealized gains in Other components of equity at the reclassification date will be amortized to Net interest income over the remaining life of the reclassified securities using the effective interest method and this amortization will be offset by the amortization of the fair value premium of these securities.

On the date of reclassification, the debt securities reclassified to loans and receivables and held-to-maturity had weighted average effective interest rates of 1.67% and 3.13%, respectively, with estimated cash flows expected to be recovered, on an undiscounted basis, of $4,270 million and $5,487 million, respectively. As at October 31, 2015, the fair value and carrying value of the securities reclassified to loans and receivables were $4,078 million and $4,083 million, respectively, and the fair value and carrying value of the securities reclassified to held-to-maturity were $5,231 million and $5,231 million, respectively.

The following table provides information regarding debt securities that we reclassified in the current reporting period:

**Financial instruments reclassified in the current period**

| | For the year ended October 31, 2015 | |
|---|---|---|
| (Millions of Canadian dollars) | **Unrealized gains (losses) during the period** | **Interest income/gains (losses) recognized in net income during the period** (1) |
| **Available-for-sale securities reclassified to loans and receivables** | | |
| Canadian government debt – Federal (2) | **$ 21** | **$ 83** |
| **Available-for-sale securities reclassified to held-to-maturity** | | |
| Canadian government debt – Federal (3) | **48** | **159** |
| | **$ 69** | **$ 242** |

(1) Includes amortization of net unrealized gains associated with reclassified assets that were included in Other components of equity on the date of reclassification.

(2) The change in fair value of these debt securities recorded in OCI for the year ended October 31, 2015 was an unrealized gain of $29 million (October 31, 2014 – unrealized gain of $9 million, October 31, 2013 – unrealized gain of $9 million). Unrealized losses of $8 million would also have been recognized in OCI for the year ended October 31, 2015, had these debt securities not been reclassified.

(3) The change in fair value of these debt securities recorded in OCI for the year ended October 31, 2015 was an unrealized gain of $57 million (October 31, 2014 – unrealized gain of $13 million, October 31, 2013 – unrealized loss of $140 million). Unrealized losses of $9 million would also have been recognized in OCI for the year ended October 31, 2015, had these debt securities not been reclassified.

The following table provides information regarding certain debt securities that we reclassified in the prior reporting period:

**Financial instruments reclassified in prior periods**

| | As at | |
|---|---|---|
| | **October 31 2015** | October 31 2014 |
| (Millions of Canadian dollars) | **Total carrying value and fair value** | Total carrying value and fair value |
| **Financial assets – FVTPL reclassified to available-for-sale** (1) | | |
| CDO | **$ 561** | $ 751 |
| Mortgage-backed securities | **19** | 44 |
| | **$ 580** | $ 795 |

(1) On October 1, 2011 and November 1, 2011, we reclassified $1,872 million and $255 million, respectively, of certain CDO and U.S. non-agency MBS from classified as at FVTPL to AFS.

| | For the year ended | | | | | |
|---|---|---|---|---|---|---|
| | **October 31, 2015** | | October 31, 2014 | | October 31, 2013 | |
| (Millions of Canadian dollars) | **Unrealized gains (losses) during the period** (1) | **Interest income/ gains (losses) recognized in net income during the period** | Unrealized gains (losses) during the period (1) | Interest income/ gains (losses) recognized in net income during the period | Unrealized gains (losses) during the period (1) | Interest income/ gains (losses) recognized in net income during the period |
| **FVTPL reclassified to available-for-sale** | | | | | | |
| CDO | **$ (17)** | **$ 28** | $ (29) | $ 58 | $ (5) | $ 59 |
| Mortgage-backed securities | **–** | **2** | (2) | 4 | – | 8 |
| | **$ (17)** | **$ 30** | $ (31) | $ 62 | $ (5) | $ 67 |

(1) This change represents the fair value gains or losses that would have been recognized in profit or loss had the assets not been reclassified.

## Note 5 Loans

| (Millions of Canadian dollars) | As at October 31, 2015 Canada | United States | Other International | Total | As at October 31, 2014 Canada | United States | Other International | Total |
|---|---|---|---|---|---|---|---|---|
| **Retail** (1) | | | | | | | | |
| Residential mortgages | $ 229,987 | $ 772 | $ 3,216 | $ 233,975 | $ 215,624 | $ 539 | $ 3,094 | $ 219,257 |
| Personal | 84,637 | 4,623 | 5,086 | 94,346 | 86,984 | 4,082 | 4,955 | 96,021 |
| Credit cards | 15,516 | 89 | 254 | 15,859 | 14,650 | 65 | 209 | 14,924 |
| Small business (2) | 4,003 | – | – | 4,003 | 4,067 | – | – | 4,067 |
| | 334,143 | 5,484 | 8,556 | 348,183 | 321,325 | 4,686 | 8,258 | 334,269 |
| **Wholesale** (1) | | | | | | | | |
| Business (3) | 60,221 | 34,385 | 21,952 | 116,558 | 55,374 | 23,544 | 20,250 | 99,168 |
| Bank (4) | 530 | 115 | 1,155 | 1,800 | 413 | 30 | 758 | 1,201 |
| Sovereign (5) | 6,332 | – | 1,379 | 7,711 | 1,797 | – | 788 | 2,585 |
| | 67,083 | 34,500 | 24,486 | 126,069 | 57,584 | 23,574 | 21,796 | 102,954 |
| **Total loans** | $ 401,226 | $ 39,984 | $ 33,042 | $ 474,252 | $ 378,909 | $ 28,260 | $ 30,054 | $ 437,223 |
| **Allowance for loan losses** | (1,416) | (131) | (482) | (2,029) | (1,466) | (100) | (428) | (1,994) |
| **Total loans net of allowance for loan losses** | $ 399,810 | $ 39,853 | $ 32,560 | $ 472,223 | $ 377,443 | $ 28,160 | $ 29,626 | $ 435,229 |

(1) Geographic information is based on residence of borrower.
(2) Includes small business exposure managed on a pooled basis.
(3) Includes small business exposure managed on an individual client basis.
(4) Bank refers primarily to regulated deposit-taking institutions and securities firms.
(5) Sovereign refers to all central governments and agencies, central banks, as well as other qualifying public sector entities and multilateral development banks.

**Loans maturity and rate sensitivity**

| (Millions of Canadian dollars) | As at October 31, 2015 — Maturity term (1) Under 1 year (2) | 1 to 5 years | Over 5 years | Total | Rate sensitivity Floating | Fixed Rate | Non-rate-sensitive | Total |
|---|---|---|---|---|---|---|---|---|
| **Retail** | $ 194,596 | $ 143,352 | $ 10,235 | $ 348,183 | $ 126,141 | $ 216,841 | $ 5,201 | $ 348,183 |
| **Wholesale** | 101,922 | 19,505 | 4,642 | 126,069 | 53,799 | 70,827 | 1,443 | 126,069 |
| **Total loans** | $ 296,518 | $ 162,857 | $ 14,877 | $ 474,252 | $ 179,940 | $ 287,668 | $ 6,644 | $ 474,252 |
| **Allowance for loan losses** | | | | (2,029) | | | | (2,029) |
| **Total loans net of allowance for loan losses** | | | | $ 472,223 | | | | $ 472,223 |

| (Millions of Canadian dollars) | As at October 31, 2014 — Maturity term (1) Under 1 year (2) | 1 to 5 years | Over 5 years | Total | Rate sensitivity Floating | Fixed Rate | Non-rate-sensitive | Total |
|---|---|---|---|---|---|---|---|---|
| Retail | $ 184,164 | $ 140,566 | $ 9,539 | $ 334,269 | $ 121,191 | 208,498 | 4,580 | $ 334,269 |
| Wholesale | 83,746 | 15,745 | 3,463 | 102,954 | 44,068 | 57,742 | 1,144 | 102,954 |
| Total loans | $ 267,910 | $ 156,311 | $ 13,002 | $ 437,223 | $ 165,259 | $ 266,240 | $ 5,724 | $ 437,223 |
| Allowance for loan losses | | | | (1,994) | | | | (1,994) |
| Total loans net of allowance for loan losses | | | | $ 435,229 | | | | $ 435,229 |

(1) Generally, based on the earlier of contractual repricing or maturity date.
(2) Includes variable rate loans that can be repriced at the clients' discretion without penalty.

**Allowance for credit losses**

| (Millions of Canadian dollars) | Balance at beginning of period | Provision for credit losses | Write-offs | Recoveries | Unwind of discount | Exchange rate changes/ other | Balance at end of period |
|---|---|---|---|---|---|---|---|
| | For the year ended October 31, 2015 | | | | | | |
| Retail | | | | | | | |
| Residential mortgages | $ 240 | $ 46 | $ (64) | $ 7 | $ (23) | $ 36 | $ 242 |
| Personal | 535 | 384 | (494) | 105 | (16) | 16 | 530 |
| Credit cards | 385 | 378 | (497) | 119 | – | 1 | 386 |
| Small business | 64 | 32 | (40) | 10 | (2) | – | 64 |
| | 1,224 | 840 | (1,095) | 241 | (41) | 53 | 1,222 |
| Wholesale | | | | | | | |
| Business | 768 | 258 | (243) | 33 | (39) | 28 | 805 |
| Bank (1) | 2 | (1) | – | 1 | – | – | 2 |
| | 770 | 257 | (243) | 34 | (39) | 28 | 807 |
| Total allowance for loan losses | 1,994 | 1,097 | (1,338) | 275 | (80) | 81 | 2,029 |
| Allowance for off-balance sheet and other items (2) | 91 | – | – | – | – | – | 91 |
| **Total allowance for credit losses** | $ 2,085 | $ 1,097 | $ (1,338) | $ 275 | $ (80) | $ 81 | $ 2,120 |
| Individually assessed | $ 214 | $ 149 | $ (132) | $ 18 | $ (26) | $ 29 | $ 252 |
| Collectively assessed | 1,871 | 948 | (1,206) | 257 | (54) | 52 | 1,868 |
| **Total allowance for credit losses** | $ 2,085 | $ 1,097 | $ (1,338) | $ 275 | $ (80) | $ 81 | $ 2,120 |

| (Millions of Canadian dollars) | Balance at beginning of period | Provision for credit losses | Write-offs | Recoveries | Unwind of discount | Exchange rate changes/ other | Balance at end of period |
|---|---|---|---|---|---|---|---|
| | For the year ended October 31, 2014 | | | | | | |
| Retail | | | | | | | |
| Residential mortgages | $ 151 | $ 95 | $ (30) | $ 2 | $ (26) | $ 48 | $ 240 |
| Personal | 583 | 444 | (565) | 106 | (23) | (10) | 535 |
| Credit cards | 385 | 353 | (466) | 114 | – | (1) | 385 |
| Small business | 61 | 44 | (47) | 9 | (2) | (1) | 64 |
| | 1,180 | 936 | (1,108) | 231 | (51) | 36 | 1,224 |
| Wholesale | | | | | | | |
| Business | 777 | 228 | (221) | 32 | (36) | (12) | 768 |
| Bank (1) | 2 | – | – | – | – | – | 2 |
| | 779 | 228 | (221) | 32 | (36) | (12) | 770 |
| Total allowance for loan losses | 1,959 | 1,164 | (1,329) | 263 | (87) | 24 | 1,994 |
| Allowance for off-balance sheet and other items (2) | 91 | – | – | – | – | – | 91 |
| Total allowance for credit losses | $ 2,050 | $ 1,164 | $ (1,329) | $ 263 | $ (87) | $ 24 | $ 2,085 |
| Individually assessed | $ 240 | $ 160 | $ (188) | $ 16 | $ (24) | $ 10 | $ 214 |
| Collectively assessed | 1,810 | 1,004 | (1,141) | 247 | (63) | 14 | 1,871 |
| Total allowance for credit losses | $ 2,050 | $ 1,164 | $ (1,329) | $ 263 | $ (87) | $ 24 | $ 2,085 |

| (Millions of Canadian dollars) | Balance at beginning of period | Provision for credit losses | Write-offs | Recoveries | Unwind of discount | Exchange rate changes/ other | Balance at end of period |
|---|---|---|---|---|---|---|---|
| | For the year ended October 31, 2013 | | | | | | |
| Retail | | | | | | | |
| Residential mortgages | $ 124 | $ 41 | $ (24) | $ 2 | $ (24) | $ 32 | $ 151 |
| Personal | 543 | 455 | (498) | 96 | (17) | 4 | 583 |
| Credit cards | 403 | 354 | (466) | 112 | – | (18) | 385 |
| Small business | 72 | 32 | (35) | 9 | (2) | (15) | 61 |
| | 1,142 | 882 | (1,023) | 219 | (43) | 3 | 1,180 |
| Wholesale | | | | | | | |
| Business | 852 | 355 | (448) | 51 | (43) | 10 | 777 |
| Bank (1) | 2 | – | – | – | – | – | 2 |
| | 854 | 355 | (448) | 51 | (43) | 10 | 779 |
| Total allowance for loan losses | 1,996 | 1,237 | (1,471) | 270 | (86) | 13 | 1,959 |
| Allowance for off-balance sheet and other items (2) | 91 | – | – | – | – | – | 91 |
| Total allowance for credit losses | $ 2,087 | $ 1,237 | $ (1,471) | $ 270 | $ (86) | $ 13 | $ 2,050 |
| Individually assessed | $ 298 | $ 287 | $ (346) | $ 31 | $ (28) | $ (2) | $ 240 |
| Collectively assessed | 1,789 | 950 | (1,125) | 239 | (58) | 15 | 1,810 |
| Total allowance for credit losses | $ 2,087 | $ 1,237 | $ (1,471) | $ 270 | $ (86) | $ 13 | $ 2,050 |

(1) Bank refers primarily to regulated deposit-taking institutions and securities firms.
(2) The allowance for off-balance sheet and other items is reported separately in Other liabilities – Provisions.

**Net interest income after provision for credit losses**

| (Millions of Canadian dollars) | For the year ended **October 31 2015** | October 31 2014 | October 31 2013 |
|---|---|---|---|
| Net interest income | **$ 14,771** | $ 14,116 | $ 13,249 |
| Provision for credit losses | **1,097** | 1,164 | 1,237 |
| Net interest income after provision for credit losses | **$ 13,674** | $ 12,952 | $ 12,012 |

**Loans past due but not impaired**

| (Millions of Canadian dollars) | As at **October 31, 2015** 1 to 29 days | 30 to 89 days | 90 days and greater | Total | October 31, 2014 1 to 29 days | 30 to 89 days | 90 days and greater | Total |
|---|---|---|---|---|---|---|---|---|
| Retail | **$ 3,054** | **$ 1,298** | **$ 314** | **$4,666** | $ 3,055 | $ 1,284 | $ 316 | $4,655 |
| Wholesale | **417** | **184** | **–** | **601** | 431 | 322 | – | 753 |
| | **$ 3,471** | **$ 1,482** | **$ 314** | **$5,267** | $ 3,486 | $ 1,606 | $ 316 | $5,408 |

**Gross carrying value of loans individually determined to be impaired** (1)

| (Millions of Canadian dollars) | As at **October 31 2015** | October 31 2014 |
|---|---|---|
| Retail | **$ –** | $ – |
| Wholesale | | |
| Business | **991** | 631 |
| Bank (2) | **2** | 2 |
| | **$ 993** | $ 633 |

(1) Average balance of gross individually assessed impaired loans for the year ended October 31, 2015 was $830 million (October 31, 2014 – $690 million).
(2) Bank refers primarily to regulated deposit-taking institutions and securities firms.

## Note 6 Derecognition of financial assets

We enter into transactions in which we transfer financial assets such as loans or securities to structured entities or other third parties. The transferred financial assets are derecognized from our Consolidated Balance Sheets when we transfer substantially all of the risks and rewards of ownership of the financial assets. When we are exposed to substantially all of the risks and rewards of the assets, or when we have neither transferred nor retained substantially all of the risks and rewards but retain control of the financial assets, we continue to recognize the financial assets on our Consolidated Balance Sheets and a liability is recognized for the cash proceeds received.

The majority of assets transferred under repurchase agreements, securities lending agreements, and in our Canadian residential mortgage securitization transactions do not qualify for derecognition.

**Transferred financial assets not derecognized**

*Securitization of Canadian residential mortgage loans*

We securitize insured Canadian residential mortgage loans through the creation of MBS pools under the National Housing Act MBS (NHA MBS) program. All loans securitized under the NHA MBS program are required to be insured by the Canadian Mortgage Housing Corporation or a third-party insurer. We require the borrower to pay the insurance for mortgages in which the loan amount is greater than 80% of the original appraised value of the property (loan-to-value (LTV) ratio). For residential mortgage loans securitized under this program with an LTV ratio less than 80%, we are required to insure the mortgages at our own expense. Under the NHA MBS program, we are responsible for making all payments due on our issued MBS, regardless of whether we collect the necessary funds from the mortgagor or the insurer. When the borrower defaults on the mortgage payment, we submit a claim to the insurer if the amount recovered from the collection or foreclosure process is lower than the sum of the principal balance, accrued interest and collection costs on the outstanding loan. The insurance claim process is managed by the insurance provider in accordance with the insurer's policies and covers the entire unpaid loan balance plus generally up to 12 months of interest, selling costs and other eligible expenses. If an insurance claim is denied, a loss is recognized in Provision for credit losses in our Consolidated Statements of Income. The amount recorded as a loss is not significant to our Consolidated Financial Statements and no significant losses were incurred due to legal action arising from a mortgage default during 2015 and 2014.

We sell the NHA MBS pools primarily to a government-sponsored structured entity under the Canada Mortgage Bond (CMB) program. The entity periodically issues CMBs, which are guaranteed by the government, and sells them to third-party investors. Proceeds of the CMB issuances are used by the entity to purchase the NHA MBS pools from eligible NHA MBS issuers who participate in the issuance of a particular CMB series. Our continuing involvement includes servicing the underlying residential mortgage loans we have securitized, either ourselves or through a third-party servicer. We also act as counterparty in interest rate swap agreements where we pay the entity the interest due to CMB investors and receive the interest on the underlying MBS and reinvested assets. As part of the swap, we are also required to maintain a principal reinvestment account for principal payments received on the underlying mortgage loans to meet the repayment obligation upon maturity of the CMB. We reinvest the collected principal payments in permitted investments as outlined in the swap agreement.

We have determined that certain of the NHA MBS program loans transferred to the entity do not qualify for derecognition as we have not transferred substantially all of the risks and rewards of ownership. As a result, these transferred MBS continue to be classified as residential mortgage loans and recognized on our Consolidated Balance Sheets. The cash received for these transferred MBS is treated as a secured borrowing and a corresponding liability recorded in Deposits – Business and government on our Consolidated Balance Sheets.

*Securities sold under repurchase agreements and securities loaned*

We also enter into transactions such as repurchase agreements and securities lending agreements where we transfer assets under agreements to repurchase them on a future day and retain substantially all of the credit, price, interest rate and foreign exchange risks and rewards associated with the assets. These transferred assets remain on our Consolidated Balance Sheets and are accounted for as collateralized borrowing transactions.

The following table provides information on the carrying amount and fair value of the transferred assets that did not qualify for derecognition, and their associated liabilities.

| | As at | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **October 31, 2015** | | | | October 31, 2014 | | | |
| (Millions of Canadian dollars) | **Canadian residential mortgage loans** (1), (2) | **Securities sold under repurchase agreements** (3) | **Securities loaned** (3) | **Total** | Canadian residential mortgage loans (1) (2) | Securities sold under repurchase agreements (3) | Securities loaned (3) | Total |
| Carrying amount of transferred assets that do not qualify for derecognition | **$ 35,707** | **$ 78,327** | **$ 4,961** | **$ 118,995** | $ 36,972 | $ 60,279 | $ 4,052 | $ 101,303 |
| Carrying amount of associated liabilities | **36,130** | **78,327** | **4,961** | **119,418** | 36,941 | 60,279 | 4,052 | 101,272 |
| Fair value of transferred assets | **$ 35,770** | **$ 78,327** | **$ 4,961** | **$ 119,058** | $ 37,010 | $ 60,279 | $ 4,052 | $ 101,341 |
| Fair value of associated liabilities | **37,150** | **78,327** | **4,961** | **120,438** | 37,769 | 60,279 | 4,052 | 102,100 |
| Fair value of net position | **$ (1,380)** | **$ –** | **$ –** | **$ (1,380)** | $ (759) | $ – | $ – | $ (759) |

(1) Includes Canadian residential mortgage loans transferred primarily to Canada Housing Trust at the initial securitization and other permitted investments used for funding requirements after the initial securitization.
(2) Canada Mortgage Bond (CMB) investors have legal recourse only to the transferred assets, and do not have recourse to our general assets.
(3) Does not include over-collateralization of assets pledged.

## Note 7 Structured entities

In the normal course of business, we engage in a variety of financial transactions with structured entities to support our financing and investing needs as well as those of our customers. A structured entity is an entity in which voting or similar rights are not the dominant factor in deciding control. Structured entities are generally created to achieve a narrow and well defined objective with restrictions around their ongoing activities. We consolidate a structured entity when we control the entity in accordance with our accounting policy described in Note 2. In other cases, we may sponsor or have an interest in such an entity but not consolidate it.

**Consolidated structured entities**

We consolidate the following structured entities, whose assets and liabilities are recorded on our Consolidated Balance Sheets. Third-party investors in these structured entities generally have recourse only to the assets of the related entity and do not have recourse to our general assets unless we breach our contractual obligations to those entities. In the ordinary course of business, the assets of each consolidated structured entity can generally only be used to settle the obligations of that entity.

*Credit card securitization vehicle*

We securitize a portion of our credit card receivables through a structured entity on a revolving basis. The entity purchases co-ownership interests in a pool of credit card receivables and issues senior and subordinated term notes collateralized by the underlying pool of credit card receivables. Investors who purchase the term notes have recourse only to the underlying pool of credit card receivables.

We continue to service the credit card receivables sold and perform an administrative role for the entity. We also provide first-loss protection through our retained interest in the transferred assets, the cash reserve balance we fund from time to time, and also through certain subordinated notes which we retain. Additionally, we may own some senior notes as investments or for market-making activities; we provide subordinated loans to the entity to pay upfront expenses; and we act as counterparty to interest rate and cross currency swap agreements which hedge the entity's interest rate and currency risk exposure.

We consolidate the structured entity because we have decision making power over the timing and size of future issuances and other relevant activities which were predetermined by us at inception. We also obtain significant funding benefits and are exposed to the majority of the residual ownership risks through the credit support provided. As at October 31, 2015, $9.1 billion of notes issued by our credit card securitization vehicle were included in Deposits on our Consolidated Balance Sheets (October 31, 2014 – $8.5 billion).

*Auto loan securitization vehicles*

We obtained control of certain auto loan securitization vehicles as a result of the acquisition of the Canadian auto finance and deposit business of Ally Financial Inc. completed in 2013. These vehicles issued senior and subordinated notes collateralized by auto loan receivables originated and transferred to the entities by Ally Financial Inc. After the acquisition, we provided credit enhancement to the outstanding notes through overcollateralization, cash reserve accounts and our interest in the excess spread, which was subordinated to the noteholders. We also acted as swap counterparty for one entity's interest rate swap agreements which hedge its interest rate risk exposure.

We consolidate these vehicles because we have the decision making power over their investing and financing activities. As at October 31, 2015, all of the outstanding senior and subordinated notes issued by these vehicles have been repaid in full; therefore, $nil of such notes were included in Deposits on our Consolidated Balance Sheets (October 31, 2014 – $407 million).

*Collateralized commercial paper vehicle*

We established a funding vehicle that provides loans to us and finances those loans by issuing commercial paper to third-party investors. The structured entity's commercial paper carries an equivalent credit rating to RBC because we are obligated to advance funds to the entity in the event there are insufficient funds from other sources to settle maturing commercial paper. We pledge collateral to secure the loans and are exposed to the market and credits risks of the pledged securities. We administer the entity and earn an administration fee for providing these services.

We consolidate the structured entity because we have decision making power over the relevant activities, are the sole borrower from the structure, and are exposed to a majority of the residual ownership risks through the credit support provided. As at October 31, 2015, $11.8 billion of commercial paper issued by the vehicle was included in Deposits on our Consolidated Balance Sheets (October 31, 2014 – $7.8 billion).

*Innovative capital vehicles*

RBC Capital Trust was created to issue innovative capital instruments, the proceeds from which were used to purchase mortgages from RBC. We consolidate the trust as, through our roles as trustee, administrative agent and equity investor, we have the decision making power over the relevant activities of the trust and are exposed to variability from the performance of the underlying mortgages. Refer to Note 20 for further details on our innovative capital instruments.

*Covered bonds*

RBC Covered Bond Guarantor Limited Partnership (Guarantor LP) was created to issue guarantees of covered bonds that we issue. We periodically transfer mortgages to Guarantor LP to support funding activities and asset coverage requirements under our covered bond program. The covered bonds guaranteed by Guarantor LP are direct, unsecured and unconditional obligations of RBC; therefore, investors have a claim against the Bank which will continue if the covered bonds are not paid by the Bank and the mortgage assets in Guarantor LP are insufficient to satisfy the obligations owing on the covered bonds. We act as general partner, limited partner, swap counterparty, lender and liquidity provider to Guarantor LP and registered issuer of the covered bonds.

We consolidate Guarantor LP as we have the decision making power over the relevant activities through our role as general partner and are exposed to variability from the performance of the underlying mortgages. As at October 31, 2015, the total amount of mortgages transferred and outstanding was $54.5 billion (October 31, 2014 – $38.3 billion) and $37.2 billion of covered bonds were recorded as Deposits on our Consolidated Balance Sheets (October 31, 2014 – $26.4 billion).

*Municipal bond TOB structures*

We sell taxable and tax-exempt municipal bonds into Tender Option Bond (TOB) structures, which consist of a credit enhancement (CE) trust and a TOB trust. The CE trust purchases a bond from us, financed with a trust certificate issued to the TOB trust. The TOB trust then issues floating-rate certificates to short-term investors and a residual certificate that is held by us. We are the remarketing agent for the floating-rate certificates

and provide a liquidity facility to the TOB trust which requires us to purchase any certificates tendered but not successfully remarketed. We also provide a letter of credit to the CE trust under which we are required to extend funding if there are any losses on the underlying bonds. We earn interest on the residual certificate and receive market-based fees for acting as remarketing agent and providing the liquidity facility and letter of credit.

We consolidate both the CE trust and TOB trust when we are the holder of the residual certificate as we have decision making power over the relevant activities, including the selection of the underlying municipal bonds and the ability to terminate the structure, and are exposed to variability from the performance of the underlying municipal bonds. As at October 31, 2015, $6.0 billion of municipal bonds were included in AFS securities related to consolidated TOB structures (October 31, 2014 – $3.3 billion) and a corresponding $6.1 billion of floating rate certificates were included in Deposits on our Consolidated Balance Sheets (October 31, 2014 – $3.3 billion).

*Non-RBC managed Investment funds*

We enter into certain fee-based equity derivative transactions where our investments in the reference funds are held by an intermediate limited partnership entity (intermediate entity) in which we hold a substantial majority of the equity interests. We consolidate the intermediate entity because we have the decision making power to direct all the activities of the entity and are exposed to a majority of the risks and rewards through our equity investments. As at October 31, 2015, $227 million of Trading securities representing our investments in the reference funds were recorded on our Consolidated Balance Sheets (October 31, 2014 – $277 million).

*RBC managed investment funds*

We are sponsors and investment managers of mutual and pooled funds, which gives us the ability to direct the investment decisions of the funds. We consolidate those mutual and pooled funds in which our interests, which include direct investment in seed capital plus management or performance fees, indicate that we are acting as a principal. As at October 31, 2015, $586 million of Trading securities held in the consolidated funds (October 31, 2014 – $586 million) and $190 million of Other liabilities representing the fund units held by third parties (October 31, 2014 – $189 million) were recorded on our Consolidated Balance Sheets.

**Unconsolidated structured entities**

We have interests in certain structured entities that we do not consolidate but have recorded assets and liabilities on our Consolidated Balance Sheets related to our transactions and involvement with these entities.

The following table presents the assets and liabilities recorded on our Consolidated Balance Sheets and our maximum exposure to loss related to our interests in unconsolidated structured entities. It also presents the size of each class of unconsolidated structured entity, as measured by the total assets of the entities in which we have an interest.

| | As at October 31, 2015 | | | | | | |
|---|---|---|---|---|---|---|---|
| (Millions of Canadian dollars) | **Multi-seller conduits** (1) | **Structured finance** | **Non-RBC managed investment funds** | **RBC managed investment funds** | **Third-party securitization vehicles** | **Other** | **Total** |
| On-balance sheet assets | | | | | | | |
| Securities | **$ 17** | **$ –** | **$ 2,661** | **$ 275** | **$ –** | **$ 697** | **$ 3,650** |
| Loans | **764** | **1,323** | **–** | **–** | **5,447** | **–** | **7,534** |
| Derivatives | **19** | **2** | **–** | **–** | **3** | **54** | **78** |
| Other assets | **–** | **547** | **1** | **225** | **–** | **57** | **830** |
| | **$ 800** | **$ 1,872** | **$ 2,662** | **$ 500** | **$ 5,450** | **$ 808** | **$ 12,092** |
| On-balance sheet liabilities | | | | | | | |
| Derivatives | **$ 24** | **$ –** | **$ –** | **$ –** | **$ –** | **$ 11** | **$ 35** |
| Other liabilities | **–** | **–** | **33** | **–** | **–** | **2** | **35** |
| | **$ 24** | **$ –** | **$ 33** | **$ –** | **$ –** | **$ 13** | **$ 70** |
| Maximum exposure to loss (2) | **$ 37,789** | **$ 3,681** | **$ 3,440** | **$ 490** | **$ 9,694** | **$ 927** | **$ 56,021** |
| Total assets of unconsolidated structured entities | **$ 37,044** | **$ 21,621** | **$ 658,236** | **$ 278,474** | **$ 125,294** | **$ 67,658** | **$ 1,188,327** |

| | As at October 31, 2014 | | | | | | |
|---|---|---|---|---|---|---|---|
| (Millions of Canadian dollars) | Multi-seller conduits (1) | Structured finance | Non-RBC managed investment funds | RBC managed investment funds | Third-party securitization vehicles | Other | Total |
| On-balance sheet assets | | | | | | | |
| Securities | $ 42 | $ – | $ 3,343 | $ 151 | $ 1 | $ 696 | $ 4,233 |
| Loans | 864 | – | – | – | 1,463 | – | 2,327 |
| Derivatives | – | 3 | – | – | – | 8 | 11 |
| Other assets | – | 913 | 1 | 220 | – | 51 | 1,185 |
| | $ 906 | $ 916 | $ 3,344 | $ 371 | $ 1,464 | $ 755 | $ 7,756 |
| On-balance sheet liabilities | | | | | | | |
| Derivatives | $ 85 | $ – | $ – | $ – | $ 2 | $ – | $ 87 |
| Other liabilities | – | – | 5 | – | – | 3 | 8 |
| | $ 85 | $ – | $ 5 | $ – | $ 2 | $ 3 | $ 95 |
| Maximum exposure to loss (2) | $ 31,019 | $ 2,158 | $ 4,005 | $ 203 | $ 2,397 | $ 873 | $ 40,655 |
| Total assets of unconsolidated structured entities | $ 30,428 | $ 13,118 | $ 621,938 | $ 272,852 | $ 27,095 | $ 64,963 | $ 1,030,394 |

(1) Total assets of unconsolidated structured entities represent the maximum assets that may have to be purchased by the conduits under purchase commitments outstanding. Of the purchase commitments outstanding, the conduits have purchased financial assets totalling $25.2 billion as at October 31, 2015 (October 31, 2014 – $19.8 billion).

(2) The maximum exposure to loss resulting from our interests in these entities consists mostly of investments, loans, fair value of derivatives, liquidity and credit enhancement facilities. The maximum exposure to loss of the multi-seller conduits is higher than the on-balance sheet assets primarily by the notional amounts of the backstop liquidity and credit enhancement facilities. Refer to Note 26.

Below is a description of our involvement with each significant class of unconsolidated structured entity.

*Multi-seller conduits*
We administer five multi-seller asset-backed commercial paper (ABCP) conduit programs (multi-seller conduits) – two in Canada and three in the U.S. These conduits primarily purchase financial assets from clients and finance those purchases by issuing ABCP.

We do not maintain any ownership or retained interests in the multi-seller conduits that we administer and have no rights to, or control of, their assets. As the administrative agent, we earn a residual fee for providing services such as coordinating funding activities, transaction structuring, documentation, execution and monitoring of transactions. The ABCP issued by each multi-seller conduit is in the conduit's own name with recourse to the financial assets owned by each multi-seller conduit, and is non-recourse to us except through our participation in liquidity and/or credit enhancement facilities. We may purchase ABCP issued by our multi-seller conduits from time to time in our capacity as placement agent in order to facilitate the overall program liquidity.

We provide transaction-specific and program-wide liquidity facilities to the multi-seller conduits. In addition, we provide program-wide credit enhancement to the multi-seller conduits which obligate us to purchase assets or advance funds in the event the multi-seller conduit does not otherwise have funds from other sources, such as from the liquidity facilities, to settle maturing ABCP. In some cases, we or another third party may provide transaction-specific credit enhancement which can take various forms. We receive market-based fees for providing these liquidity and credit facilities.

For certain transactions, we act as counterparty to foreign exchange rate forward contracts and interest rate swaps to facilitate our clients' securitization of fixed rate and/or foreign currency denominated assets through the conduits. These derivatives expose us to foreign exchange and interest rate risks that are centrally managed by our foreign exchange trading and swap desks, respectively, and credit risk on the underlying assets that is mitigated by the credit enhancement described below.

Each transaction is structured with transaction-specific first loss protection provided by the third-party seller. This enhancement can take various forms, including but not limited to overcollateralization, excess spread, subordinated classes of financial assets, guarantees or letters of credit. The amount of this enhancement varies but is generally sized to cover a multiple of loss experience.

An unrelated third party (expected loss investor) absorbs credit losses, up to a maximum contractual amount, that may occur in the future on the assets in the multi-seller conduits before the multi-seller conduits' debt holders and us. In return for assuming this multi-seller conduit first-loss position, each multi-seller conduit pays the expected loss investor a return commensurate with its risk position. The expected loss investor has substantive power to direct the majority of the activities which significantly impact the conduit's economic performance, including initial selection and approval of the asset purchase commitments and liquidity facilities, approval of renewal and amendment of these transactions and facilities, sale or transfer of assets, ongoing monitoring of asset performance, mitigation of credit losses, and management of the ABCP liabilities.

We do not consolidate these multi-seller conduits as we do not have the decision-making power to direct the relevant activities noted above.

*Structured finance*
We purchased U.S. ARS from certain trusts (U.S. ARS Trusts) which fund their long-term investments in student loans by issuing short-term senior and subordinated notes. We are subject to losses on these U.S. ARS Trusts if defaults are experienced on the underlying student loans; however, in the majority of these structures, the principal and accrued interest on the student loans is guaranteed by U.S. government agencies. We act as auction agent for some of these entities but have no legal obligation to purchase the notes issued by these entities in the auction process. We do not consolidate these U.S. ARS Trusts as we do not have decision making power over the investing and financing activities of the Trusts, which are the activities that most significantly affect the performance of the Trusts.

Additionally, we invest in certain municipal bond TOB structures that we do not consolidate. These structures are similar to those consolidated municipal bond TOB structures described above; however, the residual certificates are held by third-parties and we do not provide credit enhancement of the underlying assets. We only provide liquidity facilities on the floating-rate certificates which may be drawn if certificates are tendered but not able to be remarketed. We do not have decision making power over the relevant activities of the structures; therefore, we do not consolidate these structures. The assets transferred into these programs are derecognized from our Consolidated Balance Sheets.

We provide senior warehouse financing to structured entities that are established by third parties to acquire loans for the purposes of issuing a term collateralized loan obligation (CLO) transaction. Subordinated financing is provided during the warehouse phase by one or more third-party equity investors. We act as the arranger and placement agent for the term CLO transaction. Proceeds from the sale of the term CLO are used to repay our senior warehouse financing, at which point we have no further involvement with the transaction. We do not consolidate these CLO structures as we do not have decision making power over the relevant activities of the entity, which include the initial selection and subsequent management of the underlying debt portfolio.

*Non-RBC managed investment funds*
We enter into fee-based equity derivative transactions with third parties including mutual funds, unit investment trusts and other investment funds. These transactions provide their investors with the desired exposure to a reference fund, and we economically hedge our exposure to these derivatives by investing in those reference funds. We also act as custodian or administrator for several funds. We do not consolidate those reference funds that are managed by third parties as we do not have power to direct their investing activities.

We provide liquidity facilities to certain third-party investment funds. The funds issued unsecured variable-rate preferred shares and invest in portfolios of tax-exempt municipal bonds. Undrawn liquidity commitments expose us to liquidity risk of the preferred shares and drawn commitments expose us to the credit risk of the underlying municipal bonds. We do not consolidate these third-party managed funds as we do not have power to direct their investing activities.

*RBC managed investment funds*
We are sponsors and investment managers of mutual and pooled funds which gives us the ability to direct the investment decisions of the funds. We do not consolidate those mutual and pooled funds in which our interests indicate that we are exercising our decision making power as an agent of the other unit holders.

*Third-party securitization vehicles*
We hold interests in securitization vehicles that provide funding to certain third parties on whose behalf the entities were created. The activities of these entities are limited to the purchase and sale of specified assets from the sponsor and the issuance of asset-backed notes collateralized by those assets. The underlying assets are typically receivables, including auto loans and leases. We, as well as other financial institutions, are

obligated to provide funding up to our maximum commitment level and are exposed to credit losses on the underlying assets after various credit enhancements. Enhancement can take various forms, including but not limited to overcollateralization, excess spread, subordinated classes of financial assets, guarantees or letters of credit. The amount of this enhancement varies but is generally sized to cover a multiple of loss experience. We do not consolidate these entities as we do not have decision making power over the relevant activities, including the investing and financing activities.

*Other*

Other structured entities include credit investment products and tax credit funds.

We use structured entities to generally transform credit derivatives into cash instruments, to distribute credit risk and to create customized credit products to meet investors' specific requirements. We enter into derivative contracts, including credit derivatives, to purchase protection from these entities (credit protection) and convert various risk factors such as yield, currency or credit risk of underlying assets to meet the needs of the investors. We act as sole arranger and swap provider for certain entities and, in some cases, fulfill other administrative functions for the entities. We do not consolidate these credit investment product entities as we do not have decision making power over the relevant activities, which include selection of the collateral and reference portfolio, and are not exposed to a majority of the benefits or risks of the entities.

We created certain funds to pass through tax credits received from underlying low-income housing or historic rehabilitation real estate projects to third parties (tax credit funds). We are sponsors of the tax credit funds as a result of our responsibility to manage the funds, arrange the financing, and perform the administrative duties of these tax credit funds. We do not consolidate the tax credit funds as the investors in these funds have the decision making power to select the underlying investments and are exposed to the majority of the residual ownership and tax risks of the funds.

**Other interests in unconsolidated structured entities**

In the normal course of business, we buy and sell passive interests in certain third-party structured entities, including mutual funds, exchange traded funds, and government-sponsored asset backed securities vehicles. Our investments in these entities are managed as part of larger portfolios which are held for trading, liquidity or hedging purposes. We did not create or sponsor these entities and do not have any decision making power over their ongoing activities. Our maximum exposure to loss is limited to our on-balance sheet investments in these entities, which are not included in the table above. Refer to Note 3 and Note 4 for further details on our investment securities.

**Sponsored entities**

We are a sponsor of certain structured entities in which we have interests but do not consolidate. In determining whether we are a sponsor of a structured entity, we consider both qualitative and quantitative factors, including the purpose and nature of the entity, our initial and continuing involvement and whether we hold subordinated interests in the entity. We are considered to be the sponsor of certain credit investment products, tax credit entities, RBC-managed mutual funds and a commercial mortgage securitization vehicle. During the year ended October 31, 2015, we transferred commercial mortgages with a carrying amount of $195 million (October 31, 2014 – $173 million) to a sponsored securitization vehicle in which we did not have an interest as at the end of the reporting period.

**Financial support provided to structured entities**

During the years ended October 31, 2015, 2014 and 2013, we have not provided any financial or non-financial support to any consolidated or unconsolidated structured entities when we were not contractually obligated to do so. Furthermore, we have no intention to provide such support in the future.

## Note 8 Derivative financial instruments and hedging activities

Derivative instruments are categorized as either financial or non-financial derivatives. Financial derivatives are financial contracts whose value is derived from an underlying interest rate, foreign exchange rate, credit risk, and equity or equity index. Non-financial derivatives are contracts whose value is derived from a precious metal, commodity instrument or index. The notional amount of derivatives represents the contract amount used as a reference point to calculate payments. Notional amounts are generally not exchanged by counterparties, and do not reflect our exposure at default.

**Financial derivatives**

*Forwards and futures*

Forward contracts are effectively non-standardized agreements that are transacted between counterparties in the OTC market, whereas futures are standardized contracts with respect to amounts and settlement dates, and are traded on regular futures exchanges. Examples of forwards and futures are described below.

Interest rate forwards (forward rate agreements) and futures are contractual obligations to buy or sell an interest-rate sensitive financial instrument on a predetermined future date at a specified price.

Foreign exchange forwards and futures are contractual obligations to exchange one currency for another at a specified price for settlement at a predetermined future date.

Equity forwards and futures are contractual obligations to buy or sell at a fixed value (the specified price) of an equity index, a basket of stocks or a single stock at a predetermined future date.

*Swaps*

Swaps are OTC contracts in which two counterparties exchange a series of cash flows based on agreed upon rates applied to a notional amount. Examples of swap agreements are described below.

Interest rate swaps are agreements where two counterparties exchange a series of payments based on different interest rates applied to a notional amount in a single currency. Cross currency swaps involve the exchange of fixed payments in one currency for the receipt of fixed payments in another currency. Cross currency interest rate swaps involve the exchange of both interest and notional amounts in two different currencies.

Equity swaps are contracts in which one counterparty agrees to pay or receive from the other cash flows based on changes in the value of an equity index, a basket of stocks or a single stock.

*Options*
Options are contractual agreements under which the seller (writer) grants the purchaser the right, but not the obligation, either to buy (call option) or sell (put option), a security, exchange rate, interest rate, or other financial instrument or commodity at a predetermined price, at or by a specified future date. The seller (writer) of an option can also settle the contract by paying the cash settlement value of the purchaser's right. The seller (writer) receives a premium from the purchaser for this right. The various option agreements that we enter into include but are not limited to interest rate options, foreign currency options, equity options and index options.

*Credit derivatives*
Credit derivatives are OTC contracts that transfer credit risk related to an underlying financial instrument (referenced asset) from one counterparty to another. Examples of credit derivatives are described below.

Credit default swaps provide protection against the decline in value of the referenced asset as a result of specified credit events such as default or bankruptcy. They are similar in structure to an option, whereby the purchaser pays a premium to the seller of the credit default swap in return for payment contingent on a credit event affecting the referenced asset.

Credit default baskets are similar to credit default swaps except that the underlying referenced financial instrument is a group of assets instead of a single asset.

Total return swaps are contracts where one counterparty agrees to pay or receive from the other cash flows based on changes in the value of the referenced asset.

*Other derivative products*
Certain warrants and loan commitments that meet the definition of derivative are also included as derivative instruments.

**Non-financial derivatives**
We also transact in non-financial derivative products including precious metal and commodity derivative contracts in both the OTC and exchange markets.

**Derivatives issued for trading purposes**
Most of our derivative transactions relate to sales and trading activities. Sales activities include the structuring and marketing of derivative products to clients to enable them to transfer, modify or reduce current or expected risks. Trading involves market-making, positioning and arbitrage activities. Market-making involves quoting bid and offer prices to other market participants with the intention of generating revenue based on spread and volume. Positioning involves managing market risk positions with the expectation of profiting from favourable movements in prices, rates or indices. Arbitrage activities involve identifying and profiting from price differentials between markets and products.

**Derivatives issued for other-than-trading purposes**
We also use derivatives for purposes other than trading, primarily for hedging, in conjunction with the management of interest rate, credit, equity and foreign exchange risk related to our funding, lending, investment activities and asset/liability management.

Interest rate swaps are used to manage our exposure to interest rate risk by modifying the repricing or maturity characteristics of existing and/or forecasted assets and liabilities, including funding and investment activities. Purchased options are used to hedge redeemable deposits and other options embedded in consumer products. We manage our exposure to foreign currency risk with cross currency swaps and foreign exchange forward contracts. We predominantly use credit derivatives to manage our credit exposures. We mitigate industry sector concentrations and single-name exposures related to our credit portfolio by purchasing credit derivatives to transfer credit risk to third parties.

Certain derivatives and cash instruments are specifically designated and qualify for hedge accounting. We apply hedge accounting to minimize volatility in earnings and capital caused by changes in interest rates or foreign exchange rates. Interest rate and currency fluctuations will either cause assets and liabilities to appreciate or depreciate in market value or cause variability in forecasted cash flows. When a hedging relationship is effective, gains, losses, revenue and expenses of the hedging instrument will offset the gains, losses, revenue and expenses of the hedged item. We largely assess and measure the effectiveness of a hedging relationship based on the change in fair value of the derivative hedging instrument relative to the change in fair value of the hedged item. When cash instruments are designated as hedges of currency risks, only changes in their value due to currency risk are included in the assessment and measurement of hedge effectiveness.

From time to time, we also enter into derivative transactions to economically hedge certain exposures that do not otherwise qualify for hedge accounting, or where hedge accounting is not considered economically feasible to implement. In such circumstances, changes in fair value are reflected in Non-interest income.

After-tax unrealized losses relating to de-designated hedges of $65 million (before-tax unrealized losses of $89 million) included in Other components of equity as at October 31, 2015, are expected to be reclassified to Net interest income within the next 12 months.

The following table presents the fair values of the derivative and non-derivative instruments categorized by their hedging relationships, as well as derivatives that are not designated in hedging relationships.

**Derivatives and non-derivative instruments**

| | As at | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **October 31, 2015** | | | | October 31, 2014 | | | |
| | **Designated as hedging instruments in hedging relationships** | | | | Designated as hedging instruments in hedging relationships | | | |
| (Millions of Canadian dollars) | **Cash flow hedges** | **Fair value hedges** | **Net investment hedges** | **Not designated in a hedging relationship** | Cash flow hedges | Fair value hedges | Net investment hedges | Not designated in a hedging relationship |
| **Assets** | | | | | | | | |
| Derivative instruments | **$ 842** | **$ 1,814** | **$ 167** | **$ 102,803** | $ 504 | $ 1,392 | $ 87 | $ 85,419 |
| **Liabilities** | | | | | | | | |
| Derivative instruments | **1,629** | **311** | **49** | **105,871** | 511 | 121 | 205 | 88,145 |
| Non-derivative instruments | **–** | **–** | **18,804** | **–** | – | – | 20,949 | – |

**Results of hedge activities recorded in Net income and Other comprehensive income**

| (Millions of Canadian dollars) | For the year ended October 31, 2015 Net gains (losses) included in Non-interest income | Net gains (losses) included in Net interest income | After-tax unrealized gains (losses) included in OCI | October 31, 2014 Net gains (losses) included in Non-interest income | Net gains (losses) included in Net interest income | After-tax unrealized gains (losses) included in OCI | October 31, 2013 Net gains (losses) included in Non-interest income | Net gains (losses) included in Net interest income | After-tax unrealized gains (losses) included in OCI |
|---|---|---|---|---|---|---|---|---|---|
| **Fair value hedges** | | | | | | | | | |
| Gains (losses) on hedging instruments | **$ 313** | **$ n.a.** | **$ n.a.** | $ 216 | $ n.a. | $ n.a. | $ (551) | $ n.a. | $ n.a. |
| Gains (losses) on hedged items attributable to the hedged risk | **(424)** | **n.a.** | **n.a.** | (329) | n.a. | n.a. | 459 | n.a. | n.a. |
| Ineffective portion (1) | **(111)** | **n.a.** | **n.a.** | (113) | n.a. | n.a. | (92) | n.a. | n.a. |
| **Cash flow hedges** | | | | | | | | | |
| Ineffective portion | **3** | **n.a.** | **n.a.** | (13) | n.a. | n.a. | (13) | n.a. | n.a. |
| Effective portion | **n.a.** | **n.a.** | **(541)** | n.a. | n.a. | (108) | n.a. | n.a. | (11) |
| Reclassified to income during the period (2) | **n.a.** | **(447)** | **n.a.** | n.a. | (38) | n.a. | n.a. | 40 | n.a. |
| **Net investment hedges** | | | | | | | | | |
| Ineffective portion | **(1)** | **n.a.** | **n.a.** | 1 | n.a. | n.a. | 1 | n.a. | n.a. |
| Foreign currency gains (losses) | **n.a.** | **n.a.** | **5,885** | n.a. | n.a. | 2,743 | n.a. | n.a. | 1,402 |
| Gains (losses) from hedges | **n.a.** | **n.a.** | **(3,223)** | n.a. | n.a. | (1,585) | n.a. | n.a. | (912) |
| | **$ (109)** | **$ (447)** | **$ 2,121** | $ (125) | $ (38) | $ 1,050 | $ (104) | $ 40 | $ 479 |

(1) Includes losses of $106 million (October 31, 2014 – $109 million; October 31, 2013 – $82 million) that are excluded from the assessment of hedge effectiveness. These amounts are recorded in Non-interest income and are offset by economic hedges.
(2) After-tax losses of $330 million were reclassified from Other components of equity to income during the year ended October 31, 2015 (October 31, 2014 – losses of $28 million; October 31, 2013 – gains of $30 million).
n.a. not applicable

**Notional amount of derivatives by term to maturity (absolute amounts)**

| (Millions of Canadian dollars) | As at October 31, 2015 Term to maturity Within 1 year | 1 to 5 years | Over 5 years (1) | Total | Trading | Other than Trading |
|---|---|---|---|---|---|---|
| **Over-the-counter contracts** | | | | | | |
| Interest rate contracts | | | | | | |
| Forward rate agreements | **$ 602,072** | **$ 26,334** | **$ –** | **$ 628,406** | **$ 628,406** | **$ –** |
| Swaps | **1,717,989** | **3,946,377** | **2,482,659** | **8,147,025** | **7,922,567** | **224,458** |
| Options purchased | **106,908** | **99,994** | **34,649** | **241,551** | **241,551** | **–** |
| Options written | **107,213** | **108,237** | **44,268** | **259,718** | **259,718** | **–** |
| Foreign exchange contracts | | | | | | |
| Forward contracts | **1,273,434** | **45,591** | **1,275** | **1,320,300** | **1,271,428** | **48,872** |
| Cross currency swaps | **7,404** | **24,711** | **31,010** | **63,125** | **59,423** | **3,702** |
| Cross currency interest rate swaps | **246,668** | **609,751** | **323,403** | **1,179,822** | **1,129,357** | **50,465** |
| Options purchased | **25,921** | **13,773** | **4,274** | **43,968** | **43,968** | **–** |
| Options written | **24,933** | **12,168** | **4,677** | **41,778** | **41,778** | **–** |
| Credit derivatives (2) | **1,250** | **9,759** | **3,947** | **14,956** | **14,286** | **670** |
| Other contracts (3) | **75,723** | **57,344** | **24,819** | **157,886** | **154,504** | **3,382** |
| **Exchange-traded contracts** | | | | | | |
| Interest rate contracts | | | | | | |
| Futures – long positions | **18,934** | **10,469** | **10** | **29,413** | **29,413** | **–** |
| Futures – short positions | **36,589** | **25,939** | **2** | **62,530** | **62,530** | **–** |
| Options purchased | **17,282** | **9,119** | **–** | **26,401** | **26,401** | **–** |
| Options written | **1,281** | **956** | **–** | **2,237** | **2,237** | **–** |
| Foreign exchange contracts | | | | | | |
| Futures – long positions | **308** | **–** | **–** | **308** | **308** | **–** |
| Futures – short positions | **714** | **13** | **–** | **727** | **727** | **–** |
| Other contracts (3) | **170,464** | **43,345** | **1,197** | **215,006** | **215,006** | **–** |
| | **$ 4,435,087** | **$ 5,043,880** | **$ 2,956,190** | **$ 12,435,157** | **$ 12,103,608** | **$ 331,549** |

| (Millions of Canadian dollars) | As at October 31, 2014 | | | | | |
|---|---|---|---|---|---|---|
| | Term to maturity | | | | | |
| | Within 1 year | 1 to 5 years | Over 5 years (1) | Total | Trading | Other than Trading |
| **Over-the-counter contracts** | | | | | | |
| Interest rate contracts | | | | | | |
| Forward rate agreements | $ 324,707 | $ 47,227 | $ – | $ 371,934 | $ 371,934 | $ – |
| Swaps | 1,626,852 | 3,301,834 | 1,852,349 | 6,781,035 | 6,579,940 | 201,095 |
| Options purchased | 98,085 | 101,493 | 23,930 | 223,508 | 223,508 | – |
| Options written | 97,259 | 104,445 | 32,258 | 233,962 | 233,962 | – |
| Foreign exchange contracts | | | | | | |
| Forward contracts | 1,019,102 | 30,832 | 1,094 | 1,051,028 | 1,018,520 | 32,508 |
| Cross currency swaps | 7,371 | 15,102 | 20,415 | 42,888 | 42,156 | 732 |
| Cross currency interest rate swaps | 148,340 | 424,982 | 218,011 | 791,333 | 763,764 | 27,569 |
| Options purchased | 27,159 | 12,665 | 4,058 | 43,882 | 43,882 | – |
| Options written | 28,287 | 12,220 | 4,475 | 44,982 | 44,982 | – |
| Credit derivatives (2) | 1,702 | 16,188 | 8,124 | 26,014 | 24,707 | 1,307 |
| Other contracts (3) | 62,652 | 58,982 | 20,685 | 142,319 | 140,168 | 2,151 |
| **Exchange-traded contracts** | | | | | | |
| Interest rate contracts | | | | | | |
| Futures – long positions | 14,429 | 16,614 | 47 | 31,090 | 31,090 | – |
| Futures – short positions | 52,345 | 19,373 | 1 | 71,719 | 71,719 | – |
| Options purchased | 21,303 | 5,229 | – | 26,532 | 26,532 | – |
| Options written | 4,322 | – | – | 4,322 | 4,322 | – |
| Foreign exchange contracts | | | | | | |
| Futures – long positions | 960 | – | – | 960 | 960 | – |
| Futures – short positions | 1,167 | – | – | 1,167 | 1,167 | – |
| Other contracts (3) | 132,399 | 33,755 | 420 | 166,574 | 166,571 | 3 |
| | $ 3,668,441 | $ 4,200,941 | $ 2,185,867 | $ 10,055,249 | $ 9,789,884 | $ 265,365 |

(1) Includes contracts maturing in over 10 years with a notional value of $876 billion (October 31, 2014 – $668 billion). The related gross positive replacement cost is $60 billion (October 31, 2014 – $39 billion).
(2) Credit derivatives include credit default swaps, total return swaps and credit default baskets. Credit derivatives with a notional value of $0.7 billion (October 31, 2014 – $1.3 billion) are economic hedges. Trading credit derivatives comprise protection purchased of $8.9 billion (October 31, 2014 – $13.3 billion) and protection sold of $5.3 billion (October 31, 2014 – $11.4 billion).
(3) Other contracts include precious metal, commodity, stable value and equity derivative contracts.

The following tables indicate the periods when the cash flows are expected to occur and when they are expected to affect profit or loss for cash flow hedges.

| (Millions of Canadian dollars) | As at October 31, 2015 | | | | | |
|---|---|---|---|---|---|---|
| | **Within 1 year** | **1 to 2 years** | **2 to 3 years** | **3 to 5 years** | **Over 5 years** | **Total** |
| Cash inflows from assets | **$ 156** | **$ 189** | **$ 192** | **$ 243** | **$ 12** | **$ 792** |
| Cash outflows from liabilities | **(1,004)** | **(282)** | **(730)** | **(3,556)** | **(151)** | **(5,723)** |
| Net cash flows | **$ (848)** | **$ (93)** | **$ (538)** | **$ (3,313)** | **$ (139)** | **$(4,931)** |

| (Millions of Canadian dollars) | As at October 31, 2014 | | | | | |
|---|---|---|---|---|---|---|
| | Within 1 year | 1 to 2 years | 2 to 3 years | 3 to 5 years | Over 5 years | Total |
| Cash inflows from assets | $ 268 | $ 287 | $ 243 | $ 325 | $ 85 | $ 1,208 |
| Cash outflows from liabilities | (540) | (446) | (384) | (269) | (87) | (1,726) |
| Net cash flows | $ (272) | $ (159) | $ (141) | $ 56 | $ (2) | $ (518) |

**Fair value of derivative instruments**

| | As at | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | October 31, 2015 | | | | October 31, 2014 | | | |
| | Average fair value for year ended (1) | | Year end fair value | | Average fair value for year ended (1) | | Year end fair value | |
| (Millions of Canadian dollars) | Positive | Negative | Positive | Negative | Positive | Negative | Positive | Negative |
| **Held or issued for trading purposes** | | | | | | | | |
| Interest rate contracts | | | | | | | | |
| Forward rate agreements | $ 340 | $ 303 | $ 323 | $ 291 | $ 258 | $ 206 | $ 347 | $ 357 |
| Swaps | 136,398 | 130,623 | 135,901 | 129,829 | 78,884 | 75,195 | 95,960 | 91,386 |
| Options purchased | 4,155 | – | 3,330 | – | 3,671 | – | 4,123 | – |
| Options written | – | 5,380 | – | 4,573 | – | 4,509 | – | 5,101 |
| | 140,893 | 136,306 | 139,554 | 134,693 | 82,813 | 79,910 | 100,430 | 96,844 |
| Foreign exchange contracts | | | | | | | | |
| Forward contracts | 16,505 | 16,294 | 11,599 | 11,477 | 8,416 | 8,741 | 12,155 | 11,752 |
| Cross currency swaps | 3,039 | 3,254 | 3,844 | 4,109 | 1,732 | 1,155 | 1,788 | 1,506 |
| Cross currency interest rate swaps | 21,445 | 27,584 | 19,931 | 26,385 | 10,433 | 14,261 | 16,034 | 19,165 |
| Options purchased | 3,026 | – | 2,337 | – | 1,645 | – | 2,621 | – |
| Options written | – | 2,486 | – | 1,898 | – | 1,349 | – | 2,222 |
| | 44,015 | 49,618 | 37,711 | 43,869 | 22,226 | 25,506 | 32,598 | 34,645 |
| Credit derivatives (2) | 130 | 200 | 94 | 153 | 225 | 281 | 254 | 301 |
| Other contracts (3) | 9,431 | 12,868 | 10,704 | 12,866 | 7,052 | 10,662 | 8,525 | 12,373 |
| | 194,469 | 198,992 | 188,063 | 191,581 | 112,316 | 116,359 | 141,807 | 144,163 |
| **Held or issued for other than trading purposes** | | | | | | | | |
| Interest rate contracts | | | | | | | | |
| Swaps | | | 2,923 | 1,585 | | | 2,098 | 626 |
| | | | 2,923 | 1,585 | | | 2,098 | 626 |
| Foreign exchange contracts | | | | | | | | |
| Forward contracts | | | 274 | 253 | | | 326 | 259 |
| Cross currency swaps | | | 20 | 506 | | | – | 45 |
| Cross currency interest rate swaps | | | 3,107 | 2,080 | | | 885 | 754 |
| | | | 3,401 | 2,839 | | | 1,211 | 1,058 |
| Credit derivatives (2) | | | – | 18 | | | – | 41 |
| Other contracts (3) | | | 69 | 69 | | | 112 | 112 |
| | | | 6,393 | 4,511 | | | 3,421 | 1,837 |
| **Total gross fair values before netting** | | | 194,456 | 196,092 | | | 145,228 | 146,000 |
| Valuation adjustments determined on a pooled basis | | | (1,303) | (272) | | | (758) | (36) |
| Impact of netting agreements that qualify for balance sheet offset | | | (87,527) | (87,960) | | | (57,068) | (56,982) |
| | | | 105,626 | 107,860 | | | 87,402 | 88,982 |
| Impact of netting agreements that do not qualify for balance sheet offset (4) | | | (71,833) | (71,833) | | | (60,546) | (60,546) |
| | | | $ 33,793 | $ 36,027 | | | $ 26,856 | $ 28,436 |

(1) Average fair value amounts are calculated based on monthly balances.
(2) Credit derivatives include credit default swaps, total return swaps and credit default baskets.
(3) Other contracts include precious metal, commodity, stable value and equity derivative contracts.
(4) Additional impact of offsetting credit exposures on contracts that do not qualify for balance sheet offset.

**Fair value of derivative instruments by term to maturity**

| | As at | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | October 31, 2015 | | | | October 31, 2014 | | | |
| (Millions of Canadian dollars) | Less than 1 year | 1 to 5 years | Over 5 years | Total | Less than 1 year | 1 to 5 years | Over 5 years | Total |
| Derivative assets | $ 24,920 | $ 35,883 | $ 44,823 | $ 105,626 | $ 19,485 | $ 29,838 | $ 38,079 | $ 87,402 |
| Derivative liabilities | 26,092 | 40,380 | 41,388 | 107,860 | 19,980 | 32,640 | 36,362 | 88,982 |

**Derivative-related credit risk**

Credit risk from derivative transactions is generated by the potential for the counterparty to default on its contractual obligations when one or more transactions have a positive market value to us. Therefore, derivative-related credit risk is represented by the positive fair value of the instrument and is normally a small fraction of the contract's notional amount.

We subject our derivative transactions to the same credit approval, limit and monitoring standards that we use for managing other transactions that create credit exposure. This includes evaluating the creditworthiness of counterparties, and managing the size, diversification and maturity structure of the portfolio. Credit utilization for all products is compared with established limits on a continual basis and is subject to a standard exception reporting process. We use a single internal rating system for all credit risk exposure. In most cases, these internal ratings approximate the external risk ratings of public rating agencies.

Netting is a technique that can reduce credit exposure from derivatives and is generally facilitated through the use of master netting agreements. A master netting agreement provides for a single net settlement of all financial instruments covered by the agreement in the event of default. However, credit risk is reduced only to the extent that our financial obligations to the same counterparty can be set off against

obligations of the counterparty to us. We maximize the use of master netting agreements to reduce derivative-related credit exposure. Our overall exposure to credit risk that is reduced through master netting agreements may change substantially following the reporting date as the exposure is affected by each transaction subject to the agreement as well as by changes in underlying market rates. Measurement of our credit exposure arising out of derivative transactions is reduced to reflect the effects of netting in cases where the enforceability of that netting is supported by appropriate legal analysis as documented in our trading credit risk policies.

The use of collateral is another significant credit mitigation technique for managing derivative-related counterparty credit risk. Mark-to-market provisions in our agreements with some counterparties, typically in the form of a Credit Support Annex, provide us with the right to request that the counterparty pay down or collateralize the current market value of its derivatives positions when the value passes a specified threshold amount.

Replacement cost represents the total fair value of all outstanding contracts in a gain position after factoring in the master netting agreements. The credit equivalent amount is defined as the sum of the replacement cost plus an add-on amount for potential future credit exposure as defined by OSFI. The risk-weighted amount is determined by applying the standard OSFI defined measures of counterparty risk to the credit equivalent amount.

**Derivative-related credit risk**

| | As at | | | | | |
|---|---|---|---|---|---|---|
| | **October 31, 2015** (1) | | | October 31, 2014 (1) | | |
| (Millions of Canadian dollars) | **Replacement cost** | **Credit equivalent amount** (2) | **Risk-weighted equivalent** (3) | Replacement cost | Credit equivalent amount (2) | Risk-weighted equivalent (3) |
| **Over-the-counter contracts** | | | | | | |
| Interest rate contracts | | | | | | |
| Forward rate agreements | **$ 182** | **$ 233** | **$ 50** | $ 183 | $ 276 | $ 70 |
| Swaps | **14,747** | **27,688** | **5,197** | 12,455 | 22,308 | 4,660 |
| Options purchased | **340** | **700** | **446** | 355 | 665 | 386 |
| Foreign exchange contracts | | | | | | |
| Forward contracts | **5,041** | **11,254** | **3,202** | 5,731 | 11,049 | 3,201 |
| Swaps | **7,686** | **9,809** | **3,878** | 3,190 | 6,576 | 2,516 |
| Options purchased | **322** | **547** | **276** | 225 | 443 | 201 |
| Credit derivatives (4) | **34** | **913** | **204** | 178 | 2,053 | 1,136 |
| Other contracts (5) | **2,499** | **7,539** | **4,320** | 1,780 | 6,670 | 3,996 |
| **Exchange traded contracts** | **4,245** | **12,048** | **241** | 3,530 | 10,358 | 207 |
| | **$ 35,096** | **$ 70,731** | **$ 17,814** | $ 27,627 | $ 60,398 | $ 16,373 |

(1) The amounts presented are net of master netting agreements in accordance with Basel III.
(2) The total credit equivalent amount includes collateral applied of $17.8 billion (October 31, 2014 – $11.4 billion).
(3) The risk-weighted balances are calculated in accordance with Basel III.
(4) Credit derivatives include credit default swaps, total return swaps and credit default baskets, and exclude credit derivatives issued for other-than trading purposes related to bought protection.
(5) Other contracts include precious metal, commodity, stable value, and equity derivatives contracts.

**Replacement cost of derivative instruments by risk rating and by counterparty type**

| | **As at October 31, 2015** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Risk rating** (1) | | | | | **Counterparty type** (2) | | | |
| (Millions of Canadian dollars) | **AAA, AA** | **A** | **BBB** | **BB or lower** | **Total** | **Banks** | **OECD governments** | **Other** | **Total** |
| Gross positive replacement cost | **$ 30,824** | **$ 136,843** | **$ 16,191** | **$ 10,598** | **$ 194,456** | **$ 56,631** | **$ 16,374** | **$ 121,451** | **$ 194,456** |
| Impact of master netting agreements | **22,751** | **124,603** | **9,260** | **2,746** | **159,360** | **45,401** | **10,971** | **102,988** | **159,360** |
| Replacement cost (after netting agreements) | **$ 8,073** | **$ 12,240** | **$ 6,931** | **$ 7,852** | **$ 35,096** | **$ 11,230** | **$ 5,403** | **$ 18,463** | **$ 35,096** |

| | As at October 31, 2014 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Risk rating (1) | | | | | Counterparty type (2) | | | |
| (Millions of Canadian dollars) | AAA, AA | A | BBB | BB or lower | Total | Banks | OECD governments | Other | Total |
| Gross positive replacement cost | $ 25,765 | $ 98,566 | $ 13,995 | $ 6,915 | $ 145,241 | $ 52,986 | $ 12,427 | $ 79,828 | $ 145,241 |
| Impact of master netting agreements | 19,279 | 88,911 | 8,154 | 1,270 | 117,614 | 44,372 | 7,743 | 65,499 | 117,614 |
| Replacement cost (after netting agreements) | $ 6,486 | $ 9,655 | $ 5,841 | $ 5,645 | $ 27,672 | $ 8,614 | $ 4,684 | $ 14,329 | $ 27,627 |

(1) Our internal risk ratings for major counterparty types approximate those of public ratings agencies. Ratings of AAA, AA, A and BBB represent investment grade ratings and ratings of BB or lower represent non-investment grade ratings.
(2) Counterparty type is defined in accordance with the capital adequacy requirements of OSFI.

## Note 9 Premises and equipment

| (Millions of Canadian dollars) | Land | Buildings | Computer equipment | Furniture, fixtures and other equipment | Leasehold improvements | Work in process | Total |
|---|---|---|---|---|---|---|---|
| **Cost** | | | | | | | |
| Balance at October 31, 2014 | **$ 137** | **$ 1,347** | **$ 1,278** | **$ 1,248** | **$ 2,192** | **$ 208** | **$ 6,410** |
| Additions (1) | **–** | **4** | **195** | **53** | **82** | **344** | **678** |
| Transfers from work in process | **–** | **11** | **52** | **61** | **212** | **(336)** | **–** |
| Disposals | **(25)** | **(95)** | **(101)** | **(108)** | **(98)** | **–** | **(427)** |
| Foreign exchange translation | **7** | **18** | **54** | **30** | **69** | **4** | **182** |
| Other | **4** | **9** | **30** | **8** | **7** | **(52)** | **6** |
| Balance at October 31, 2015 | **$ 123** | **$ 1,294** | **$ 1,508** | **$ 1,292** | **$ 2,464** | **$ 168** | **$ 6,849** |
| **Accumulated depreciation** | | | | | | | |
| Balance at October 31, 2014 | **$ –** | **$ 499** | **$ 925** | **$ 839** | **$ 1,463** | **$ –** | **$ 3,726** |
| Depreciation | **–** | **44** | **197** | **103** | **183** | **–** | **527** |
| Disposals | **–** | **(8)** | **(98)** | **(96)** | **(64)** | **–** | **(266)** |
| Foreign exchange translation | **–** | **6** | **42** | **21** | **42** | **–** | **111** |
| Other | **–** | **(7)** | **4** | **8** | **18** | **–** | **23** |
| Balance at October 31, 2015 | **$ –** | **$ 534** | **$ 1,070** | **$ 875** | **$ 1,642** | **$ –** | **$ 4,121** |
| Net carrying amount at October 31, 2015 | **$ 123** | **$ 760** | **$ 438** | **$ 417** | **$ 822** | **$ 168** | **$ 2,728** |

| (Millions of Canadian dollars) | Land | Buildings | Computer equipment | Furniture, fixtures and other equipment | Leasehold improvements | Work in process | Total |
|---|---|---|---|---|---|---|---|
| **Cost** | | | | | | | |
| Balance at October 31, 2013 | $ 134 | $ 1,358 | $ 1,516 | $ 1,434 | $ 2,040 | $ 113 | $ 6,595 |
| Additions (1) | – | 14 | 108 | 74 | 54 | 279 | 529 |
| Transfers from work in process | 1 | 17 | 43 | 34 | 90 | (185) | – |
| Disposals | (2) | (1) | (412) | (303) | (67) | (1) | (786) |
| Foreign exchange translation | 2 | 8 | 27 | 14 | 34 | 2 | 87 |
| Other | 2 | (49) | (4) | (5) | 41 | – | (15) |
| Balance at October 31, 2014 | $ 137 | $ 1,347 | $ 1,278 | $ 1,248 | $ 2,192 | $ 208 | $ 6,410 |
| **Accumulated depreciation** | | | | | | | |
| Balance at October 31, 2013 | $ – | $ 499 | $ 1,155 | $ 1,015 | $ 1,290 | $ – | $ 3,959 |
| Depreciation | – | 50 | 181 | 101 | 167 | – | 499 |
| Disposals | – | (1) | (412) | (282) | (61) | – | (756) |
| Foreign exchange translation | – | 3 | 21 | 9 | 20 | – | 53 |
| Other | – | (52) | (20) | (4) | 47 | – | (29) |
| Balance at October 31, 2014 | $ – | $ 499 | $ 925 | $ 839 | $ 1,463 | $ – | $ 3,726 |
| Net carrying amount at October 31, 2014 | $ 137 | $ 848 | $ 353 | $ 409 | $ 729 | $ 208 | $ 2,684 |

(1) At October 31, 2015, we had total contractual commitments of $157 million to acquire premises and equipment (October 31, 2014 – $216 million; October 31, 2013 – $122 million).

## Note 10 Goodwill and other intangible assets

**Goodwill**

The following table presents changes in the carrying amount of goodwill by CGU for the years ended October 31, 2015 and 2014.

| (Millions of Canadian dollars) | Canadian Banking | Caribbean Banking | Canadian Wealth Management | Global Asset Management | U.S. Wealth Management | International Wealth Management | Insurance | Investor & Treasury Services | Capital Markets | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| **At October 31, 2013** | $ 2,527 | $ 1,504 | $ 548 | $ 1,937 | $ 539 | $ 132 | $ 118 | $ 149 | $ 878 | $8,332 |
| Dispositions | – | (51) | – | – | – | – | – | – | – | (51) |
| Currency translations | – | 140 | 10 | 105 | 43 | 9 | – | – | 59 | 366 |
| **At October 31, 2014** | $ 2,527 | $ 1,593 | $ 558 | $ 2,042 | $ 582 | $ 141 | $ 118 | $ 149 | $ 937 | $8,647 |
| Dispositions | **–** | **(23)** | **–** | **–** | **–** | **(15)** | **–** | **–** | **–** | **(38)** |
| Currency translations | **–** | **250** | **21** | **177** | **91** | **16** | **–** | **–** | **125** | **680** |
| **At October 31, 2015** | **$ 2,527** | **$ 1,820** | **$ 579** | **$ 2,219** | **$ 673** | **$ 142** | **$ 118** | **$ 149** | **$ 1,062** | **$9,289** |

We perform our annual impairment test by comparing the carrying amount of each CGU to its recoverable amount. The recoverable amount of a CGU is represented by its value in use, except in circumstances where the carrying amount of a CGU exceeds its value in use. In such cases, we determine the CGU's fair value less costs of disposal and its recoverable amount is the greater of its value in use and fair value less costs of disposal. Our annual impairment test is performed as at August 1.

In our 2015 and 2014 annual impairment tests, the recoverable amounts of our Caribbean Banking and International Wealth Management CGUs were based on fair value less costs of disposal. The recoverable amounts of all other CGUs tested were based on value in use.

*Value in use*

We calculate value in use using a five-year discounted cash flow method. Future cash flows are based on financial plans agreed by management for a five-year period, estimated based on forecast results, business initiatives, capital required to support future cash flows and returns to shareholders. Key drivers of future cash flows include net interest margins and average interest-earning assets. The values assigned to these drivers over the forecast period are based on past experience, external and internal economic forecasts, and management's expectations of the impact of economic conditions on our financial results. Beyond the initial five-year period, cash flows are assumed to increase at a constant rate using a nominal long-term growth rate (terminal growth rate). Terminal growth rates are based on the current market assessment of gross domestic product and inflation for the countries within which the CGU operates. The discount rates used to determine the present value of each CGU's projected future cash flows are based on the bank-wide cost of capital, adjusted for the risks to which each CGU is exposed. CGU-specific risks include: country risk, business/operational risk, geographic risk (including political risk, devaluation risk, and government regulation), currency risk, and price risk (including product pricing risk and inflation).

The estimation of value in use involves significant judgment in the determination of inputs to the discounted cash flow model and is most sensitive to changes in future cash flows, discount rates and terminal growth rates applied to cash flows beyond the forecast period. These key inputs and assumptions used to determine the recoverable amount of each CGU using value in use were tested for sensitivity by applying a reasonably possible change to those assumptions. The post-tax discount rates were increased by 1%, terminal growth rates were decreased by 1%, and future cash flows were reduced by 10%. As at August 1, 2015, no change in an individual key input or assumption, as described, would result in a CGU's carrying amount exceeding its recoverable amount based on value in use.

The terminal growth rates and pre-tax discount rates used in our discounted cash flow models are summarized below.

| | As at | | | |
|---|---|---|---|---|
| | **August 1, 2015** | | August 1, 2014 | |
| | **Discount rate** (1) | **Terminal growth rate** | Discount rate (1) | Terminal growth rate |
| **Group of cash generating units** | | | | |
| Canadian Banking | **10.6%** | **3.0%** | 10.6% | 3.0% |
| Caribbean Banking | **13.2** | **4.3** | 13.0 | 4.2 |
| Canadian Wealth Management | **11.9** | **3.0** | 11.9 | 3.0 |
| Global Asset Management | **11.7** | **3.0** | 11.6 | 3.0 |
| U.S. Wealth Management | **16.3** | **3.0** | 15.7 | 3.0 |
| International Wealth Management | **11.9** | **3.0** | 10.3 | 3.0 |
| Insurance | **11.2** | **3.0** | 10.1 | 3.0 |
| Investor & Treasury Services | **12.4** | **3.0** | 12.8 | 3.0 |
| Capital Markets | **15.7** | **3.0** | 15.9 | 3.0 |

(1) Pre-tax discount rates are determined implicitly based on post-tax discount rates.

*Fair value less costs of disposal – Caribbean Banking*

For our Caribbean Banking CGU, we calculated fair value less costs of disposal using a discounted cash flow method that projects future cash flows over a 5-year period. Cash flows are based on management forecasts, adjusted to approximate the considerations of a prospective third-party buyer. Cash flows beyond the initial 5-year period are assumed to increase at a constant rate using a nominal long-term growth rate. Future cash flows, terminal growth rates, and discount rates are based on the same factors noted above. This fair value measurement is categorized as level 3 in the fair value hierarchy as certain significant inputs are not observable.

The estimation of fair value less costs of disposal involves significant judgment in the determination of inputs to the discounted cash flow model and is most sensitive to changes in future cash flows, discount rates and terminal growth rates applied to cash flows beyond the forecast period. These key inputs and assumptions were tested for sensitivity by applying a reasonably possible change to those assumptions. The post-tax discount rates were increased by 1%, terminal growth rates were decreased by 1%, and future cash flows were reduced by 10%. As at August 1, 2015, no reasonably possible change in an individual key input or assumption, as described, would result in the CGU's carrying amount exceeding its recoverable amount based on fair value less costs of disposal.

*Fair value less costs of disposal – International Wealth Management*

For our International Wealth Management CGU, we calculated fair value less costs of disposal using a multiples-based approach. Each business within the CGU was valued using either a Price-to-assets-under-administration (P/AUA) or Price-to-revenue (P/Rev) multiple, as appropriate, to reflect the considerations of a prospective third-party buyer. In 2015 and 2014, we applied a P/AUA multiple of 2.5% to AUA as at August 1 and a P/Rev multiple of 2.5x to revenue for the 12 months preceding the testing date. These multiples represent our best estimate from a range of reasonably possible inputs based on precedent transactions for comparable businesses. This fair value measurement is categorized as level 3 in the fair value hierarchy as certain significant inputs are not observable.

The estimation of fair value less costs of disposal involves significant judgment in the determination of the appropriate valuation approach and inputs and is most sensitive to changes in the P/AUA and P/Rev multiples. These key inputs were tested for sensitivity by reducing each multiple to the low end of the range of reasonably possible inputs considered. As at August 1, 2015, no reasonably possible change in an individual key input or assumption, as described, would result in the CGU's carrying amount exceeding its recoverable amount based on fair value less costs of disposal.

**Other intangible assets**

The following table presents the carrying amount of our other intangible assets.

| | As at October 31, 2015 | | | | | |
|---|---|---|---|---|---|---|
| (Millions of Canadian dollars) | Internally generated software | Other software | Core deposit intangibles | Customer list and relationships | In process software | Total |
| **Gross carrying amount** | | | | | | |
| Balance at October 31, 2014 | $ 3,402 | $ 1,186 | $ 168 | $ 1,511 | $ 487 | $ 6,754 |
| Additions | 50 | 75 | – | – | 615 | 740 |
| Transfers | 503 | 19 | – | – | (522) | – |
| Dispositions | (98) | (132) | – | (30) | – | (260) |
| Impairment losses | – | – | – | (22) | – | (22) |
| Currency translations | 84 | 49 | 26 | 79 | 17 | 255 |
| Other changes | (12) | (4) | – | – | (17) | (33) |
| Balance at October 31, 2015 | $ 3,929 | $ 1,193 | $ 194 | $ 1,538 | $ 580 | $ 7,434 |
| **Accumulated amortization** | | | | | | |
| Balance at October 31, 2014 | $ (2,293) | $ (888) | $ (151) | $ (647) | $ – | $ (3,979) |
| Amortization charge for the year | (494) | (81) | (18) | (119) | – | (712) |
| Dispositions | 97 | 125 | – | 9 | – | 231 |
| Impairment losses | (3) | – | – | 18 | – | 15 |
| Currency translations | (60) | (30) | (25) | (41) | – | (156) |
| Other changes | 3 | (19) | – | (3) | – | (19) |
| Balance at October 31, 2015 | $ (2,750) | $ (893) | $ (194) | $ (783) | $ – | $ (4,620) |
| Net balance, at October 31, 2015 | $ 1,179 | $ 300 | $ – | $ 755 | $ 580 | $ 2,814 |

| (Millions of Canadian dollars) | As at October 31, 2014 | | | | | |
|---|---|---|---|---|---|---|
| | Internally generated software | Other software | Core deposit intangibles | Customer list and relationships | In process software | Total |
| **Gross carrying amount** | | | | | | |
| Balance at October 31, 2013 | $ 2,554 | $ 1,128 | $ 157 | $ 1,509 | $ 711 | $ 6,059 |
| Additions | 48 | 57 | – | – | 545 | 650 |
| Transfers | 750 | 22 | – | – | (772) | – |
| Dispositions | (4) | (2) | (3) | – | – | (9) |
| Impairment losses | – | – | – | (8) | – | (8) |
| Currency translations | 32 | 15 | 14 | 48 | 8 | 117 |
| Other changes | 22 | (34) | – | (38) | (5) | (55) |
| Balance at October 31, 2014 | $ 3,402 | $ 1,186 | $ 168 | $ 1,511 | $ 487 | $ 6,754 |
| **Accumulated amortization** | | | | | | |
| Balance at October 31, 2013 | $ (1,815) | $ (811) | $ (117) | $ (539) | $ – | $ (3,282) |
| Amortization charge for the year | (460) | (60) | (22) | (124) | – | (666) |
| Dispositions | 4 | 1 | – | – | – | 5 |
| Impairment losses | – | – | – | – | – | – |
| Currency translations | (22) | (13) | (12) | (22) | – | (69) |
| Other changes | – | (5) | – | 38 | – | 33 |
| Balance at October 31, 2014 | $ (2,293) | $ (888) | $ (151) | $ (647) | $ – | $ (3,979) |
| Net balance, at October 31, 2014 | $ 1,109 | $ 298 | $ 17 | $ 864 | $ 487 | $ 2,775 |

## Note 11 Significant acquisition and dispositions

**Acquisition**

*Wealth Management*

On January 22, 2015, we announced a definitive agreement to acquire City National Corporation (City National), the holding company for City National Bank. City National Bank provides banking, investment and trust services throughout the United States and comprises substantially all of the business of City National.

During the fourth quarter, we received formal regulatory approval for the acquisition, which we completed on November 2, 2015. The results of the acquired business will be consolidated from the date of close. Refer to Note 36 for further details on the close of this transaction.

**Dispositions**

*Personal & Commercial Banking*

On July 31, 2015, we completed the sale of RBC Royal Bank (Suriname) N.V., announced on April 1, 2015. As a result of the transaction, we recorded a total loss on disposal of $19 million (before and after-tax), consisting of a loss of $23 million in the second quarter included in Non-interest expense – Other, and a gain of $4 million in the third quarter primarily relating to foreign currency translation gains reclassified from Other components of equity.

On June 27, 2014, we completed the sale of RBC Royal Bank (Jamaica) Limited and RBTT Securities Jamaica Limited to Sagicor Group Jamaica Limited, as announced on January 29, 2014. As a result of the transaction, we recorded a total loss on disposal of $100 million (before and after-tax), including a loss of $60 million in the first quarter and $40 million primarily relating to foreign currency translation losses reclassified from Other components of equity in the third quarter of 2014. The loss on disposal has been included in Non-Interest expense – Other.

*Wealth Management*

On August 28, 2015, we completed the sale of Royal Bank of Canada (Suisse) SA, announced on July 14, 2015. The transaction did not have a significant impact on our Consolidated Statements of Income.

## Note 12 Joint ventures and associated companies

The following table summarizes the carrying value of our interests in joint ventures and associated companies accounted for under the equity method as well as our share of the income of those entities.

| | Joint ventures | | | Associated companies | | |
|---|---|---|---|---|---|---|
| | As at and for the year ended | | | | | |
| (Millions of Canadian dollars) | **October 31 2015** | October 31 2014 | October 31 2013 | **October 31 2015** | October 31 2014 | October 31 2013 |
| Carrying amount | **$ 223** | $ 180 | $ 135 | **$ 137** | $ 115 | $ 112 |
| Share of: | | | | | | |
| Net income | **119** | 131 | 133 | **30** | 31 | 26 |
| Other comprehensive income | **8** | 5 | 5 | **2** | – | – |
| | **$ 127** | $ 136 | $ 138 | **$ 32** | $ 31 | $ 26 |

We do not have any joint ventures or associated companies that are individually material to our financial results.

During the year ended October 31, 2015, we recognized an impairment loss of $3 million with respect of our interests in associated companies (October 31, 2014 – $nil; October 31, 2013 – $20 million) and no gains on sales of associated companies (October 31, 2014 – $62 million; October 31, 2013 – $nil).

## Note 13 Other assets

| | As at | |
|---|---|---|
| (Millions of Canadian dollars) | **October 31 2015** | October 31 2014 |
| Cash collateral and margin deposits | **$ 23,018** | $ 12,481 |
| Accounts receivable and prepaids | **2,843** | 3,773 |
| Receivable from brokers, dealers and clients | **2,608** | 2,354 |
| Insurance-related assets | | |
| Collateral loans | **1,176** | 1,121 |
| Policy loans | **106** | 113 |
| Reinsurance assets | **683** | 512 |
| Other | **576** | 400 |
| Deferred income tax asset | **2,072** | 2,382 |
| Accrued interest receivable | **1,757** | 1,554 |
| Taxes receivable | **2,343** | 1,620 |
| Precious metals | **106** | 223 |
| Other | **3,979** | 4,162 |
| | **$ 41,267** | $ 30,695 |

## Note 14 Deposits

The following table details our deposit liabilities.

| | As at | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **October 31, 2015** | | | | October 31, 2014 | | | |
| (Millions of Canadian dollars) | **Demand** (1) | **Notice** (2) | **Term** (3) | **Total** | Demand (1) | Notice (2) | Term (3) | Total |
| Personal | **$ 128,101** | **$ 19,758** | **$ 72,707** | **$ 220,566** | $ 120,444 | $ 17,793 | $ 70,980 | $ 209,217 |
| Business and government | **175,931** | **6,854** | **272,793** | **455,578** | 162,988 | 3,038 | 220,634 | 386,660 |
| Bank | **7,711** | **23** | **13,349** | **21,083** | 5,771 | 11 | 12,441 | 18,223 |
| | **$ 311,743** | **$ 26,635** | **$ 358,849** | **$ 697,227** | $ 289,203 | $ 20,842 | $ 304,055 | $ 614,100 |
| **Non-interest-bearing** (4) | | | | | | | | |
| Canada (5) | **$ 70,286** | **$ 3,754** | **$ –** | **$ 74,040** | $ 62,468 | $ 3,478 | $ – | $ 65,946 |
| United States | **1,158** | **31** | **–** | **1,189** | 1,777 | 15 | – | 1,792 |
| Europe (6) | **1,172** | **–** | **–** | **1,172** | 3,314 | 1 | – | 3,315 |
| Other International | **6,706** | **6** | **–** | **6,712** | 5,057 | 279 | – | 5,336 |
| **Interest-bearing** (4) | | | | | | | | |
| Canada (5) | **192,736** | **13,529** | **269,395** | **475,660** | 178,478 | 10,895 | 241,902 | 431,275 |
| United States | **4,177** | **4,966** | **67,710** | **76,853** | 3,497 | 2,144 | 45,359 | 51,000 |
| Europe (6) | **31,554** | **606** | **12,270** | **44,430** | 31,118 | 418 | 9,282 | 40,818 |
| Other International | **3,954** | **3,743** | **9,474** | **17,171** | 3,494 | 3,612 | 7,512 | 14,618 |
| | **$ 311,743** | **$ 26,635** | **$ 358,849** | **$ 697,227** | $ 289,203 | $ 20,842 | $ 304,055 | $ 614,100 |

(1) Deposits payable on demand include all deposits for which we do not have the right to notice of withdrawal. These deposits include both savings and chequing accounts.
(2) Deposits payable after notice include all deposits for which we can legally require notice of withdrawal. These deposits are primarily savings accounts.
(3) Term deposits include deposits payable on a fixed date. These deposits include term deposits, guaranteed investment certificates and similar instruments. As at October 31, 2015, the balance of term deposits also includes senior deposit notes we have issued to provide long-term funding of $191 billion (October 31, 2014 - $150 billion).
(4) The geographical splits of the deposits are based on the point of origin of the deposits and where the revenue is recognized. As at October 31, 2015, deposits denominated in U.S. dollars, Sterling, Euro and other foreign currencies were $235 billion, $13 billion, $32 billion and $28 billion, respectively (October 31, 2014 – $183 billion, $11 billion, $23 billion and $22 billion).
(5) Certain amounts have been revised from those previously reported.
(6) Europe includes the United Kingdom, Luxembourg and the Channel Islands.

## Note 14 Deposits (continued)

The following table presents the contractual maturities of our term deposit liabilities.

| | As at | |
|---|---|---|
| (Millions of Canadian dollars) | **October 31 2015** | October 31 2014 |
| Within 1 year: | | |
| less than 3 months | **$ 78,735** | $ 57,840 |
| 3 to 6 months | **49,900** | 32,880 |
| 6 to 12 months | **61,096** | 50,300 |
| 1 to 2 years | **43,674** | 54,354 |
| 2 to 3 years | **39,809** | 31,559 |
| 3 to 4 years | **26,792** | 28,946 |
| 4 to 5 years | **30,184** | 24,673 |
| Over 5 years | **28,659** | 23,503 |
| | **$ 358,849** | $ 304,055 |
| Aggregate amount of term deposits in denominations of one hundred thousand dollars or more | **$ 331,000** | $ 270,000 |

The following table presents the average deposit balances and average rates of interest.

| | For the year ended | | | | | |
|---|---|---|---|---|---|---|
| | **October 31, 2015** | | October 31, 2014 | | October 31, 2013 | |
| (Millions of Canadian dollars, except for percentage amounts) | **Average balances** | **Average rates** | Average balances | Average rates | Average balances | Average rates |
| Canada | **$ 526,544** | **0.98%** | $ 477,316 | 1.13% | $ 435,842 | 1.20% |
| United States | **70,100** | **0.31** | 52,058 | 0.30 | 44,512 | 0.38 |
| Europe (1) | **48,173** | **0.28** | 43,429 | 0.21 | 38,791 | 0.27 |
| Other International | **22,630** | **0.95** | 20,299 | 1.03 | 18,571 | 0.95 |
| | **$ 667,447** | **0.86%** | $ 593,102 | 0.99% | $ 537,716 | 1.06% |

(1) Europe includes the United Kingdom, Luxembourg and the Channel Islands.

## Note 15 Insurance

**Risk management**

Insurance risk is the risk of fluctuations in the timing, frequency or severity of insured events, relative to our expectations at the time of underwriting. We do not have a high degree of concentration risk due to our geographic diversity and business mix. Concentration risk is not a major concern for the life and health insurance business as it does not have a material level of regional specific characteristics like those exhibited in the property and casualty insurance business. Exposure to concentrations of insurance risks for the property and casualty business is primarily mitigated through prudent underwriting practices and diversification by product offerings and geographical areas. Reinsurance is also used for all insurance businesses to lower our risk profile and limit the liability on a single claim. We manage underwriting and pricing risk through the use of underwriting guidelines which detail the class, nature and type of business that may be accepted, pricing policies by product line and centralized control of policy wordings. The risk that claims are handled or paid inappropriately is mitigated using a range of IT system controls and manual processes conducted by experienced staff. These, together with a range of detailed policies and procedures, ensure that all claims are handled in a timely, appropriate and accurate manner.

**Reinsurance**

In the ordinary course of business, our insurance operations reinsure risks to other insurance and reinsurance companies in order to lower our risk profile, limit loss exposure to large risks, and provide additional capacity for future growth. These ceding reinsurance arrangements do not relieve our insurance subsidiaries from their direct obligations to the insureds. We evaluate the financial condition of the reinsurers and monitor our concentrations of credit risks to minimize our exposure to losses from reinsurer insolvency. Reinsurance amounts (ceded premiums) included in Non-interest income are shown in the table below.

**Net premiums and claims**

| | For the year ended | | |
|---|---|---|---|
| (Millions of Canadian dollars) | **October 31 2015** | October 31 2014 | October 31 2013 |
| Gross premiums | **$ 4,721** | $ 4,962 | $ 4,785 |
| Premiums ceded to reinsurers | **(1,214)** | (1,220) | (1,111) |
| Net premiums | **$ 3,507** | $ 3,742 | $ 3,674 |
| Gross claims and benefits | **$ 3,237** | $ 3,692 | $ 2,768 |
| Reinsurers' share of claims and benefits | **(496)** | (498) | (442) |
| Net claims | **$ 2,741** | $ 3,194 | $ 2,326 |

**Insurance claims and policy benefit liabilities**

All actuarial assumptions are set in conjunction with Canadian Institute of Actuaries Standards of Practice and OSFI requirements. The assumptions that have the greatest effect on the measurement of insurance liabilities, the processes used to determine them and the assumptions used as at October 31, 2015 are as follows:

*Life insurance*

Mortality and morbidity – Mortality estimates are based on standard industry insured mortality tables, adjusted where appropriate to reflect our own experience. Morbidity assumptions are made with respect to the rates of claim incidence and claim termination for health insurance policies and are based on a combination of industry and our own experience.

*Future investment yield* – Assumptions are based on the current yield rate, a reinvestment assumption and an allowance for future credit losses for each line of business, and are developed using interest rate scenario testing, including prescribed scenarios for determination of minimum liabilities as set out in the actuarial standards.

*Policyholder behaviour* – Under certain policies, the policyholder has a contractual right to change benefits and premiums, as well as convert policies to permanent forms of insurance. All policyholders have the right to terminate their policies through lapse. Lapses represent the termination of policies due to non-payment of premiums. Lapse assumptions are primarily based on our recent experience adjusted for emerging industry experience where applicable.

*Non-life insurance*

Assumptions related to unpaid claims concern the patterns of development of claims from inception to ultimate settlement. The reserving assumptions, based on historical paid/incurred development patterns adjusted for changes in products, claims processes and legislative trends, result in a collective loss ratio when compared with earned premium.

The portfolio assumptions that have the greatest effect on the net liabilities included in our Consolidated Balance Sheets are listed below:

**Significant insurance assumptions**

| | As at | |
|---|---|---|
| | **October 31 2015** | October 31 2014 |
| **Life Insurance** | | |
| **Canadian Insurance** | | |
| Mortality rates (1) | **0.12%** | 0.12% |
| Morbidity rates (2) | **1.69** | 1.82 |
| Reinvestment yield (3) | **3.45** | 3.15 |
| Lapse rates (4) | **0.50** | 0.50 |
| **International Insurance** | | |
| Mortality rates (1) | **0.46** | 0.43 |
| Reinvestment yield (3) | **2.75** | 2.19 |
| **Non-life Insurance** | | |
| Expected loss ratio (5) | **60.47** | 60.16 |

(1) Average annual death rate for the largest portfolio of insured policies.
(2) Average net settlement rate for the individual and group disability insurance portfolio.
(3) Ultimate reinvestment rate of the insurance operations.
(4) Ultimate policy termination rate (lapse rate) for the largest permanent life insurance portfolio that relies on higher termination rate to maintain its profitability (lapse-supported policies).
(5) Ratio of incurred claim losses and claim expenses to net premiums of the property and casualty business, measuring the profitability or loss experience on our total book of business.

The following table summarizes our gross and reinsurers' share of insurance liabilities at the end of the year.

**Insurance claims and policy benefit liabilities**

| | As at | | | | | |
|---|---|---|---|---|---|---|
| | **October 31, 2015** | | | October 31, 2014 | | |
| (Millions of Canadian dollars) | **Gross** | **Ceded** | **Net** | Gross | Ceded | Net |
| **Life insurance policyholder liabilities** | | | | | | |
| Life, health and annuity | **$ 8,084** | **$ 519** | **$ 7,565** | $ 7,555 | $ 390 | $ 7,165 |
| Investment contracts (1) | **10** | **–** | **10** | 5 | – | 5 |
| | **$ 8,094** | **$ 519** | **$ 7,575** | $ 7,560 | $ 390 | $ 7,170 |
| **Non-life insurance policyholder liabilities** | | | | | | |
| Unearned premium provision (1) | **$ 450** | **$ –** | **$ 450** | $ 419 | $ – | $ 419 |
| Unpaid claims provision | **1,026** | **38** | **988** | 1,010 | 29 | 981 |
| | **$ 1,476** | **$ 38** | **$ 1,438** | $ 1,429 | $ 29 | $ 1,400 |
| | **$ 9,570** | **$ 557** | **$ 9,013** | $ 8,989 | $ 419 | $ 8,570 |

(1) Insurance claims and policy benefit liabilities include investment contracts and unearned premium provision, both of which are reported in Other liabilities on the Consolidated Balance Sheets.

**Reconciliation of life insurance policyholder liabilities**

| | October 31, 2015 | | | October 31, 2014 | | |
|---|---|---|---|---|---|---|
| (Millions of Canadian dollars) | **Gross** | **Ceded** | **Net** | Gross | Ceded | Net |
| Balances, beginning of the year | **$ 7,560** | **$ 390** | **$ 7,170** | $ 7,030 | $ 300 | $ 6,730 |
| New and in-force policies | **598** | **129** | **469** | 621 | 90 | 531 |
| Changes in assumption and methodology | **(69)** | **–** | **(69)** | (95) | – | (95) |
| Net change in investment contracts | **5** | **–** | **5** | 4 | – | 4 |
| **Balances, end of the year** | **$ 8,094** | **$ 519** | **$ 7,575** | $ 7,560 | $ 390 | $ 7,170 |

**Reconciliation of non-life insurance policyholder liabilities**

| | October 31, 2015 | | | October 31, 2014 | | |
|---|---|---|---|---|---|---|
| (Millions of Canadian dollars) | **Gross** | **Ceded** | **Net** | Gross | Ceded | Net |
| Balances, beginning of the year | **$ 1,429** | **$ 29** | **$ 1,400** | $ 1,415 | $ 21 | $ 1,394 |
| Changes in unearned premiums provision | | | | | | |
| Written premiums | **937** | **39** | **898** | 942 | 91 | 851 |
| Less: Net premiums earned | **(906)** | **(39)** | **(867)** | (933) | (91) | (842) |
| Changes in unpaid claims provision and adjustment expenses | | | | | | |
| Incurred claims | **614** | **27** | **587** | 595 | 38 | 557 |
| Less: Claims paid | **(598)** | **(18)** | **(580)** | (590) | (30) | (560) |
| **Balances, end of the year** | **$ 1,476** | **$ 38** | **$ 1,438** | $ 1,429 | $ 29 | $ 1,400 |

The net increase in Insurance claims and policy benefit liabilities over the prior year was comprised of the net increase in life and health, reinsurance and property and casualty liabilities attributable to business growth and market movements on assets backing life and health liabilities. During the year, we reviewed all key actuarial methods and assumptions which are used in determining the policy benefit liabilities resulting in a $67 million net decrease to insurance liabilities comprised of: (i) a decrease of $70 million for assumption updates due to net favourable interest rate and equity market changes; (ii) a decrease of $22 million due to liability impacts of significant business projects; (iii) a decrease of $12 million due to valuation system and data changes; and (iv) an increase of $37 million arising from insurance risk related assumption updates largely due to mortality, morbidity, maintenance, property and casualty margin for adverse deviation and expense assumptions. Changes in Insurance claims and policy benefit liabilities are included in Insurance policyholder benefits, claims and acquisition expenses in our Consolidated Statements of Income in the period in which the estimates changed.

**Sensitivity analysis**

The following table presents the sensitivity of the level of insurance policyholder liabilities disclosed in this note to reasonably possible changes in the actuarial assumptions used to calculate them. The percentage change in variable is applied to a range of existing actuarial modelling assumptions to derive the possible impact on net income. The disclosure is not intended to explain the impact of a percentage change in the insurance assets and liabilities disclosed above. The analyses are performed where a single assumption is changed while holding other assumptions constant, which is unlikely to occur in practice.

**Sensitivity**

| | | Net income impact for year ended | |
|---|---|---|---|
| (Millions of Canadian dollars, except for percentage amounts) | Change in variable | **October 31 2015** | October 31 2014 |
| Increase in market interest rates (1) | 1% | **$ –** | $ 1 |
| Decrease in market interest rates (1) | 1 | **14** | (3) |
| Increase in equity market values | 10 | **3** | 6 |
| Decrease in equity market values | 10 | **(2)** | (3) |
| Increase in maintenance expenses | 5 | **(28)** | (25) |
| **Life Insurance** | | | |
| Adverse change in annuitant mortality rates | 2 | **(117)** | (72) |
| Adverse change in assurance mortality rates | 2 | **(48)** | (47) |
| Adverse change in morbidity rates | 5 | **(156)** | (156) |
| Adverse change in lapse rates | 10 | **(206)** | (192) |
| **Non-life Insurance** | | | |
| Increase in expected loss ratio | 5 | **(9)** | (10) |

(1) Sensitivities for market interest rates have been calculated by increasing or decreasing 100 basis points at all points on the yield curve, with changes persisting for one year.

## Note 16 Segregated funds

We offer certain individual variable insurance contracts that allow policyholders to invest in segregated funds. The investment returns on these funds are passed directly to the policyholders. Amounts invested are at the policyholders' risk, except where the policyholders have selected options providing maturity and death benefit guarantees. A liability for the guarantees is recorded in Insurance claims and policy benefit liabilities.

Segregated funds net assets are recorded at fair value. All of our segregated funds net assets are categorized as Level 1 in the fair value hierarchy. The fair value of the segregated funds liabilities is equal to the fair value of the segregated funds net assets. Segregated funds net assets and segregated funds liabilities are presented on separate lines on the Consolidated Balance Sheets. The following tables present the composition of net assets and the changes in net assets for the year.

**Segregated funds net assets**

| | As at | |
|---|---|---|
| (Millions of Canadian dollars) | **October 31 2015** | October 31 2014 |
| Cash | **$ –** | $ 1 |
| Investment in mutual funds | **832** | 675 |
| Other liabilities, net | **(2)** | (1) |
| | **$ 830** | $ 675 |

**Changes in net assets**

| | For the year ended | |
|---|---|---|
| (Millions of Canadian dollars) | **October 31 2015** | October 31 2014 |
| Net assets, beginning of year | **$ 675** | $ 513 |
| Additions (deductions): | | |
| Deposits from policyholders | **321** | 239 |
| Net realized and unrealized gains | **2** | 52 |
| Interest and dividend | **26** | 19 |
| Payment to policyholders | **(173)** | (132) |
| Management and administrative fees | **(21)** | (16) |
| Net assets, end of year | **$ 830** | $ 675 |

## Note 17 Employee benefits - Pension and other post-employment benefits

**Plan characteristics**

We sponsor a number of programs that provide pension and post-employment benefits to eligible employees. The pension plans are administered by separate trustees that are legally segregated from the Bank. The majority of beneficiaries of the pension plans are located in Canada and other beneficiaries of the pension plans are primarily located in the United States, the United Kingdom and the Caribbean. The pension arrangements including investment, plan benefits and funding decisions are governed by local pension committees, trustees (U.K.), or management. Significant plan changes require the approval of the Board of Directors.

Our defined benefit pension plans provide pension benefits based on years of service, contributions and average earnings at retirement. Our principal defined benefit pension plans are closed to new members. New employees are generally eligible to join defined contribution pension plans. The specific features of these plans vary by location. We also provide supplemental non-registered (non-qualified) pension plans for certain executives and senior management that are typically unfunded or partially funded.

Our defined contribution pension plans provide pension benefits based on accumulated employee and Bank contributions. The Bank contributions are based on a percentage of an employee's annual earnings and a portion of the Bank contribution is dependent on the amount being contributed by the employee and their years of service.

Our primary other post-employment benefit plans provide health, dental, disability and life insurance coverage and cover a number of current and retired employees who are mainly located in Canada. These plans are unfunded unless required by legislation.

We measure our benefit obligations and pension assets as at October 31 each year. All plans are valued using the projected unit-credit method. We fund our registered defined benefit pension plans in accordance with actuarially determined amounts required to satisfy employee benefit obligations under current pension regulations. For our primary pension plan, the most recent funding actuarial valuation was completed on January 1, 2015, and the next valuation will be completed on January 1, 2016.

For the year ended October 31, 2015, total Bank contributions to our pension plans (defined benefit and defined contribution plans) and other post-employment benefit plans were $391 million and $56 million (October 31, 2014 – $537 million and $63 million), respectively. For 2016, total contributions to our pension plans and other post-employment benefit plans are expected to be $411 million and $62 million, respectively.

**Risks**

By their design, the defined benefit pension and other post-employment plans expose the Bank to various risks such as investment performance, reductions in discount rates used to value the obligations, increased longevity of plan members, future inflation levels impacting future salary increases as well as future increases in healthcare costs. By closing membership in our principal defined benefit pension and other post-employment plans and migrating to defined contribution plans, the volatility associated with the aforementioned risks will reduce over time.

The following table presents the financial position related to all of our material pension and other post-employment benefit plans worldwide, including executive retirement arrangements.

| | As at | | | |
|---|---|---|---|---|
| | **October 31, 2015** | | October 31, 2014 | |
| (Millions of Canadian dollars) | **Defined benefit pension plans** | **Other post-employment benefit plans** | Defined benefit pension plans | Other post-employment benefit plans |
| **Canada** | | | | |
| Fair value of plan assets | **$ 10,847** | **$ 11** | $ 10,419 | $ 4 |
| Present value of defined benefit obligation | **10,840** | **1,569** | 10,767 | 1,754 |
| Net surplus (deficit) | **$ 7** | **$ (1,558)** | $ (348) | $ (1,750) |
| **International** | | | | |
| Fair value of plan assets | **$ 1,049** | **$ –** | $ 932 | $ – |
| Present value of defined benefit obligation | **1,134** | **88** | 1,038 | 78 |
| Net (deficit) | **$ (85)** | **$ (88)** | $ (106) | $ (78) |
| **Total** | | | | |
| Fair value of plan assets | **$ 11,896** | **$ 11** | $ 11,351 | $ 4 |
| Present value of defined benefit obligation | **11,974** | **1,657** | 11,805 | 1,832 |
| Total net (deficit) | **$ (78)** | **$ (1,646)** | $ (454) | $ (1,828) |
| **Amounts recognized in our Consolidated Balance Sheets** | | | | |
| Employee benefit assets | **$ 245** | **$ –** | $ 138 | $ – |
| Employee benefit liabilities | **(323)** | **(1,646)** | (592) | (1,828) |
| Total net (deficit) | **$ (78)** | **$ (1,646)** | $ (454) | $ (1,828) |

The following table presents an analysis of the movement in the financial position related to all of our material pension and other post-employment benefit plans worldwide, including executive retirement arrangements.

| | As at or for the year ended | | | |
|---|---|---|---|---|
| | **October 31, 2015** | | October 31, 2014 | |
| (Millions of Canadian dollars) | **Defined benefit pension plans** (1) | **Other post-employment benefit plans** | Defined benefit pension plans (1) | Other post-employment benefit plans |
| **Change in fair value of plan assets** | | | | |
| Opening fair value of plan assets | **$ 11,351** | **$ 4** | $ 10,266 | $ 3 |
| Interest income | **460** | **–** | 472 | – |
| Remeasurements | | | | |
| Return on plan assets (excluding interest income) | **243** | **11** | 647 | – |
| Change in foreign currency exchange rate | **113** | **–** | 60 | – |
| Contributions – Employer | **235** | **56** | 400 | 63 |
| Contributions – Plan participant | **51** | **16** | 52 | 13 |
| Payments | **(513)** | **(76)** | (456) | (75) |
| Payments – amount paid in respect of any settlements | **(31)** | **–** | (78) | – |
| Other | **(13)** | **–** | (12) | – |
| Closing fair value of plan assets | **$ 11,896** | **$ 11** | $ 11,351 | $ 4 |
| **Change in present value of benefit obligation** | | | | |
| Opening benefit obligation | **$ 11,805** | **$ 1,832** | $ 10,413 | $ 1,722 |
| Current service costs | **345** | **34** | 315 | 31 |
| Past service costs | **(16)** | **–** | 97 | – |
| Interest expense | **490** | **75** | 486 | 80 |
| Remeasurements | | | | |
| Actuarial losses (gains) from demographic assumptions | **7** | **(176)** | 76 | (58) |
| Actuarial losses (gains) from financial assumptions | **(296)** | **(33)** | 830 | 119 |
| Actuarial losses (gains) from experience adjustments | **(7)** | **(27)** | 6 | 7 |
| Change in foreign currency exchange rate | **139** | **15** | 67 | 6 |
| Contributions – Plan participant | **51** | **16** | 52 | 13 |
| Payments | **(513)** | **(76)** | (456) | (75) |
| Payments – amount paid in respect of any settlements | **(31)** | **–** | (78) | – |
| Business combinations/Disposals | **–** | **(3)** | – | (11) |
| Other | **–** | **–** | (3) | (2) |
| Closing benefit obligation | **$ 11,974** | **$ 1,657** | $ 11,805 | $ 1,832 |
| Unfunded obligation | **$ 33** | **$ 332** | $ 28 | $ 1,670 |
| Wholly or partly funded obligation | **11,941** | **1,325** | 11,777 | 162 |
| Total benefit obligation | **$ 11,974** | **$ 1,657** | $ 11,805 | $ 1,832 |

(1) For pension plans with funding deficits, the benefit obligations and fair value of plan assets as at October 31, 2015 were $1,020 million and $709 million, respectively (October 31, 2014 – $10,180 million and $9,587 million, respectively).

**Pension and other post-employment benefit expense**
The following table presents the composition of our pension and other post-employment benefit expense.

| | For the year ended | | | | | |
|---|---|---|---|---|---|---|
| | Pension plans | | | Other post-employment benefit plans | | |
| (Millions of Canadian dollars) | **October 31 2015** | October 31 2014 | October 31 2013 | **October 31 2015** | October 31 2014 | October 31 2013 |
| Current service costs | **$ 345** | $ 315 | $ 298 | **$ 34** | $ 31 | $ 28 |
| Past service costs | **(16)** | 97 | (2) | **–** | – | (2) |
| Net interest expense | **30** | 14 | 30 | **75** | 80 | 73 |
| Remeasurements of other long term benefits | **–** | – | – | **2** | 9 | (5) |
| Administrative expense | **12** | 13 | 11 | **–** | – | – |
| Defined benefit pension expense | **$ 371** | $ 439 | $ 337 | **$ 111** | $ 120 | $ 94 |
| Defined contribution pension expense | **156** | 137 | 117 | **–** | – | – |
| | **$ 527** | $ 576 | $ 454 | **$ 111** | $ 120 | $ 94 |

Total service costs for the year ended October 31, 2015 totalled $335 million (October 31, 2014 – $307 million; October 31, 2013 – $284 million) for pension plans in Canada and $(6) million (October 31, 2014 – $105 million; October 31, 2013 – $12 million) for International plans. Net interest expense for the year ended October 31, 2015 totalled $25 million (October 31, 2014 – $10 million; October 31, 2013 – $26 million) for pension plans in Canada and $5 million (October 31, 2014 – $4 million; October 31, 2013 – $4 million) for International plans.

**Remeasurements of employee benefit plans**
The following table presents the composition of our remeasurements recorded in OCI.

| | For the year ended | | | | | |
|---|---|---|---|---|---|---|
| | Defined benefit pension plans | | | Other post-employment benefit plans | | |
| (Millions of Canadian dollars) | **October 31 2015** | October 31 2014 | October 31 2013 | **October 31 2015** | October 31 2014 | October 31 2013 |
| Actuarial (gains) losses: | | | | | | |
| Changes in demographic assumptions | **$ 7** | $ 76 | $ 382 | **$ (174)** | $ (54) | $ 53 |
| Changes in financial assumptions | **(296)** | 830 | (265) | **(30)** | 113 | (62) |
| Experience adjustments | **(7)** | 6 | 49 | **(34)** | – | 4 |
| Return on plan assets (excluding interest based on discount rate) | **(243)** | (647) | (601) | **(11)** | – | – |
| | **$ (539)** | $ 265 | $ (435) | **$ (249)** | $ 59 | $ (5) |

Total remeasurements recorded in OCI for the year ended October 31, 2015 were gains of $526 million (October 31, 2014 – losses of $238 million; October 31, 2013 – gains of $424 million) for pension plans in Canada and gains of $13 million (October 31, 2014 – losses of $27 million; October 31, 2013 – gains of $11 million) for International plans.

**Investment policy and strategies**
Defined benefit pension plan assets are invested prudently in order to meet our longer term pension obligations. The pension plan's investment strategy is to hold a diversified mix of investments by asset class and geographic location, in order to reduce investment-specific risk to the funded status while maximizing the expected returns to meet pension obligations. Investment of the plan's assets is conducted with careful consideration of the pension obligation's exposure to interest rates, credit spreads and inflation which are key risk factors impacting the obligation. The asset mix policy is therefore consistent with an asset/liability framework. Factors taken into consideration in developing our asset mix include but are not limited to the following:

(i) the nature of the underlying benefit obligations, including the duration and term profile of the liabilities;
(ii) the member demographics, including expectations for normal retirements, terminations, and deaths;
(iii) the financial position of the pension plans;
(iv) the diversification benefits obtained by the inclusion of multiple asset classes; and
(v) expected asset returns, including asset and liability volatility and correlations.

To implement our asset mix policy, we may invest in equity securities, debt securities, alternative investments and derivative instruments. Our holdings in certain investments, including common shares, emerging market equity and debt, debt securities rated lower than BBB and residential and commercial mortgages, cannot exceed a defined percentage of the market value of our defined benefit pension plan assets. We may use derivative instruments as either a synthetic investment to more efficiently replicate the performance of an underlying security, or as a hedge against financial risks associated with the underlying portfolio. To manage our credit risk exposure, counterparties of our derivative instruments are required to meet minimum credit ratings and enter into collateral agreements.

Our defined benefit pension plan assets are primarily comprised of equity and debt securities. Our equity securities generally have unadjusted quoted market prices in an active market (Level 1) and our debt securities generally have quoted market prices for similar assets in an active market (Level 2). Alternative investments and other includes cash, hedge funds, and private fund investments including infrastructure, real estate leases, private equity and derivative financial instruments. In the case of private fund investments, no quoted market prices are usually available (Level 2 or Level 3). These fund assets are either valued by an independent valuator or priced using observable market inputs.

During the year, investment changes and risk factor diversification continued in support of our efforts to reduce variability in the funded status. As a result, equity risk was reduced through redeployment of equity investments into a diverse mix of quality alternative investments with low correlation to equity markets, including investments in hedge funds, infrastructure, private equity and real estate. In addition, an increasing allocation to debt securities is used to reduce asset liability duration mismatch and hence variability of the plan's funded status due to interest rate changes. Longer maturity debt securities, given their price sensitivity to movements in interest rates, are considered to be a good economic

hedge to risk associated with the plan's liabilities, which are discounted using predominately long maturity bond interest rates as inputs. We expect to continue to move towards a higher weighting of debt securities as market conditions permit, to further reduce risk of variability in the funded status.

**Asset allocation of defined benefit pension plans** (1)

| | As at | | | | | |
|---|---|---|---|---|---|---|
| | **October 31, 2015** | | | October 31, 2014 | | |
| (Millions of Canadian dollars, except percentages) | **Fair value** | **Percentage of total plan assets** | **Quoted in active market** (2) | Fair value | Percentage of total plan assets | Quoted in active market (2) |
| Equity securities | | | | | | |
| Domestic | **$ 1,277** | **11%** | **100%** | $ 1,623 | 14% | 100% |
| Foreign | **2,645** | **22** | **98** | 2,530 | 22 | 100 |
| Debt securities | | | | | | |
| Domestic government bonds | **2,232** | **19** | **–** | 2,199 | 19 | – |
| Foreign government bonds | **561** | **5** | **–** | 530 | 5 | – |
| Corporate and other bonds | **2,548** | **21** | **–** | 2,097 | 19 | – |
| Alternative investments and other | **2,633** | **22** | **8** | 2,372 | 21 | 11 |
| | **$ 11,896** | **100%** | **34%** | $ 11,351 | 100% | 39% |

(1) The asset allocation is based on the underlying investments held directly and indirectly through the funds as this is how we manage our investment policy and strategies.
(2) If our assessment of quoted in an active market was based on the direct investments, 36% of our total plan assets would be classified as quoted in an active market (October 31, 2014 – 45%).

The allocation to equity securities of our pension plans in Canada is 34% (October 31, 2014 – 38%) and that of our International plans is 17% (October 31, 2014 – 18%). The allocation to debt securities of our pension plans in Canada is 44% (October 31, 2014 – 41%) and that of our International plans is 57% (October 31, 2014 – 58%). The allocation to alternative investments and other in our pension plans in Canada is 22% (October 31, 2014 – 21%) and that of our International plans is 26% (October 31, 2014 – 24%).

As at October 31, 2015, the plan assets include 1 million (October 31, 2014 – 1 million) of our common shares with a fair value of $85 million (October 31, 2014 – $107 million) and $71 million (October 31, 2014 – $39 million) of our debt securities. For the year ended October 31, 2015, dividends received on our common shares held in the plan assets were $4 million (October 31, 2014 – $4 million).

**Maturity profile**
The following table presents the maturity profile of our defined benefit pension plan obligation.

| | As at | | |
|---|---|---|---|
| | **October 31, 2015** | | |
| (Millions of Canadian dollars, except participants and years) | **Canada** | **International** | **Total** |
| Number of plan participants | **73,869** | **9,864** | **83,733** |
| Actual benefit payments 2015 | **$ 447** | **$ 97** | **$ 544** |
| Benefits expected to be paid 2016 | **514** | **50** | **564** |
| Benefits expected to be paid 2017 | **540** | **45** | **585** |
| Benefits expected to be paid 2018 | **564** | **47** | **611** |
| Benefits expected to be paid 2019 | **587** | **48** | **635** |
| Benefits expected to be paid 2020 | **607** | **52** | **659** |
| Benefits expected to be paid 2021-2025 | **3,312** | **313** | **3,625** |
| Weighted average duration of defined benefit payments | **14.6 years** | **18.0 years** | **14.9 years** |

**Significant assumptions**
Our methodologies to determine significant assumptions used in calculating the defined benefit pension and other post-employment benefit expense are as follows:

*Discount rate*
For the Canadian pension and other post-employment benefit plans, all future expected benefit payments at each measurement date are discounted at spot rates from a derived Aa corporate bond yield curve. The derived curve is based on observed rates for Aa corporate bonds with maturities less than six years and a projected Aa corporate curve based on spreads between observed Aa corporate bonds and Aa provincial bonds for periods greater than six years. For the International pension and other post-employment benefit plans, all future expected benefit payments at each measurement date are discounted at spot rates from an Aa corporate bond yield curve. Spot rates beyond 30 years are set to equal the 30-year spot rate. The discount rate is the equivalent single rate that produces the same discounted value as that determined using the entire discount curve. This valuation methodology does not rely on assumptions regarding reinvestment returns.

*Rate of increase in future compensation*
The assumptions for increases in future compensation are developed separately for each plan, where relevant. Each assumption is set based on the price inflation assumption and compensation policies in each market, as well as relevant local statutory and plan-specific requirements.

*Healthcare cost trend rates*
Healthcare cost calculations are based on both short and long term trend assumptions established based on the plan's recent trend experience as well as on market expectations.

| | As at | | | | | |
|---|---|---|---|---|---|---|
| | Defined benefit pension plans | | | Other post-employment benefit plans | | |
| | **October 31 2015** | October 31 2014 | October 31 2013 | **October 31 2015** | October 31 2014 | October 31 2013 |
| **Weighted average assumptions to determine benefit obligation** | | | | | | |
| Discount rate | **4.30%** | 4.10% | 4.60% | **4.40%** | 4.20% | 4.70% |
| Rate of increase in future compensation | **3.30%** | 3.30% | 3.30% | **n.a.** | n.a. | n.a. |
| Healthcare cost trend rates (1) | | | | | | |
| – Medical | **n.a.** | n.a. | n.a. | **4.10%** | 3.50% | 3.80% |
| – Dental | **n.a.** | n.a. | n.a. | **4.00%** | 4.00% | 4.00% |

(1) For our other post-employment benefit plans, the 2015 assumed trend rates used to measure the expected benefit costs of the defined benefit obligations are also the ultimate trend rates.
n.a. not applicable

*Mortality assumptions*
Mortality assumptions are significant in measuring our obligations under the defined benefit pension plans. These assumptions have been set based on country specific statistics. Future longevity improvements have been considered and included where appropriate. The following table summarizes the mortality assumptions used for major plans.

| | As at | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **October 31, 2015** | | | | October 31, 2014 | | | |
| | **Life expectancy at 65 for a member currently at** | | | | Life expectancy at 65 for a member currently at | | | |
| | **Age 65** | | **Age 45** | | Age 65 | | Age 45 | |
| (In years) | **Male** | **Female** | **Male** | **Female** | Male | Female | Male | Female |
| **Country** | | | | | | | | |
| Canada | **23.1** | **23.6** | **24.1** | **24.5** | 23.0 | 23.5 | 24.0 | 24.5 |
| United States | **21.2** | **23.2** | **21.7** | **24.1** | 20.6 | 22.9 | 21.1 | 23.4 |
| United Kingdom | **24.0** | **25.9** | **26.0** | **28.2** | 23.9 | 25.2 | 26.1 | 27.6 |

**Sensitivity analysis**
Assumptions adopted can have a significant effect on the obligations for defined benefit pension and other post-employment benefit plans. The increase (decrease) in obligation in the following table has been determined assuming all other assumptions are held constant. In practice, this is unlikely to occur, as changes in some of the assumptions may be correlated. The following table presents the sensitivity analysis of key assumptions for 2015.

| (Millions of Canadian dollars) | **Defined benefit pension plans – Increase (decrease) in obligation** | **Other post-employment benefit plans – Increase (decrease) in obligation** |
|---|---|---|
| **Discount rate** | | |
| Impact of 50bps increase in discount rate | **$ (839)** | **$ (110)** |
| Impact of 50bps decrease in discount rate | **930** | **124** |
| **Rate of increase in future compensation** | | |
| Impact of 50bps increase in rate of increase in future compensation | **57** | **n.a.** |
| Impact of 50bps decrease in rate of increase in future compensation | **(57)** | **n.a.** |
| **Mortality rate** | | |
| Impact of an increase in longevity by one additional year | **275** | **29** |
| **Healthcare cost trend rate** | | |
| Impact of 100bps increase in healthcare cost trend rate | **n.a.** | **101** |
| Impact of 100bps decrease in healthcare cost trend rate | **n.a.** | **(82)** |

n.a. not applicable

## Note 18 Other liabilities

| (Millions of Canadian dollars) | As at October 31 2015 | As at October 31 2014 |
|---|---|---|
| Cash collateral | **$ 15,249** | $ 10,500 |
| Accounts payable and accrued expenses | **999** | 2,386 |
| Payroll and related compensation | **6,358** | 6,582 |
| Payable to brokers, dealers and clients | **2,981** | 2,063 |
| Negotiable instruments | **2,309** | 2,416 |
| Accrued interest payable | **1,679** | 1,748 |
| Deferred income | **2,028** | 1,937 |
| Taxes payable | **1,533** | 1,691 |
| Precious metals certificates | **420** | 572 |
| Dividends payable | **1,194** | 1,127 |
| Insurance related liabilities | **735** | 617 |
| Deferred income taxes | **201** | 204 |
| Provisions | **512** | 500 |
| Other | **5,309** | 4,966 |
| | **$ 41,507** | $ 37,309 |

## Note 19 Subordinated debentures

The debentures are unsecured obligations and are subordinated in right of payment to the claims of depositors and certain other creditors. All redemptions, cancellations and exchanges of subordinated debentures are subject to the consent and approval of OSFI. The amounts presented below include the impact of fair value hedging for interest rate risk and are net of our holdings in these securities which have not been cancelled and are still outstanding.

| (Millions of Canadian dollars, except percentage and foreign currency) Maturity | Earliest par value redemption date | Interest rate | Denominated in foreign currency (millions) | As at October 31 2015 | As at October 31 2014 |
|---|---|---|---|---|---|
| November 14, 2014 (1) | | 10.00% | | **$ –** | $ 200 |
| November 4, 2018 | November 4, 2013 (2) | 5.45% (3) | | **–** | – |
| June 15, 2020 | June 15, 2015 (4) | 4.35% (5) | | **–** | 1,491 |
| November 2, 2020 | November 2, 2015 (6) | 3.18% (7) | | **1,500** | 1,483 |
| June 8, 2023 | | 9.30% | | **110** | 110 |
| July 17, 2024 (8) | July 17, 2019 | 3.04% (9) | | **1,014** | 1,002 |
| December 6, 2024 | December 6, 2019 | 2.99% (10) | | **2,061** | 1,992 |
| June 4, 2025 (8) | June 4, 2020 | 2.48% (11) | | **1,004** | – |
| September 29, 2026 (8) | September 29, 2021 | 3.45% (12) | | **1,055** | 1,009 |
| November 1, 2027 | November 1, 2022 | 4.75% | TT$300 | **62** | 53 |
| June 26, 2037 | June 26, 2017 | 2.86% | JPY 10,000 | **112** | 106 |
| October 1, 2083 | Any interest payment date | (13) | | **224** | 224 |
| June 29, 2085 | Any interest payment date | (14) | US$174 | **227** | 196 |
| June 18, 2103 | June 18, 2009 (15) | 5.95% (16) | | **–** | – |
| | | | | **$ 7,369** | $ 7,866 |
| Deferred financing costs | | | | **(7)** | (7) |
| | | | | **$ 7,362** | $ 7,859 |

The terms and conditions of the debentures are as follows:

(1) All $200 million outstanding 10.00% subordinated debentures matured on November 14, 2014.

(2) All $1 billion outstanding subordinated debentures were redeemed on November 4, 2013 for 100% of their principal amount plus accrued interest to the redemption date.

(3) Interest at stated interest rate until earliest par value redemption date, and thereafter at a rate of 1.00% above the 90-day Bankers' Acceptance rate.

(4) All $1.5 billion outstanding subordinated debentures were redeemed on June 15, 2015 for 100% of their principal amount plus accrued interest to the redemption date.

(5) Interest at stated interest rate until earliest par value redemption date, and thereafter at a rate of 1.41% above the 90-day Bankers' Acceptance rate.

(6) All $1.5 billion outstanding subordinated debentures were redeemed on November 2, 2015 for 100% of their principal amount plus accrued interest to the redemption date.

(7) Interest at stated interest rate until earliest par value redemption date, and thereafter at a rate of 1.21% above the 90-day Bankers' Acceptance rate.

(8) The notes include non-viability contingency capital (NVCC) provisions, necessary for the notes to qualify as Tier 2 regulatory capital under Basel III. NVCC provisions require the conversion of the instrument into a variable number of common shares in the event that OSFI deems the Bank non-viable or a federal or provincial government in Canada publicly announces that the Bank has accepted or agreed to accept a capital injection. In such an event, each note is convertible into common shares pursuant to an automatic conversion formula with a multiplier of 1.5 and a conversion price based on the greater of: (i) a floor price of $5.00 and (ii) the current market price of our common shares based on the volume weighted average trading price of our common shares on the Toronto Stock Exchange. The number of shares issued is determined by dividing the par value of the note (including accrued and unpaid interest on such note) by the conversion price and then times the multiplier.

(9) Interest at stated interest rate until earliest par value redemption date, and thereafter at a rate of 1.08% above the 90-day Bankers' Acceptance rate.

(10) Interest at stated interest rate until earliest par value redemption date, and thereafter at a rate of 1.10% above the 90-day Bankers' Acceptance rate.

(11) Interest at stated interest rate until earliest par value redemption date, and thereafter at a rate of 1.10% above the 90-day Bankers' Acceptance rate.

(12) Interest at stated interest rate until earliest par value redemption date, and thereafter at a rate of 1.12% above the 90-day Bankers' Acceptance rate.

(13) Interest at a rate of 40 basis points above the 30-day Bankers' Acceptance rate.

(14) Interest at a rate of 25 basis points above the U.S. dollar 3-month London Interbank Mean Rate (LIMEAN). In the event of a reduction of the annual dividend we declare on our common shares, the interest payable on the debentures is reduced pro rata to the dividend reduction and the interest reduction is payable with the proceeds from the sale of newly issued common shares.

(15) All $600 million outstanding subordinated debentures were redeemed on June 18, 2014 for 100% of their principal amount plus accrued interest to the redemption date.

(16) Interest at stated interest rate until earliest par value redemption date and every 5 years thereafter at a rate of 1.72% above the 5-year Government of Canada yield.

**Maturity schedule**
The aggregate maturities of subordinated debentures, based on the maturity dates under the terms of issue, are as follows:

| (Millions of Canadian dollars) | October 31 2015 |
|---|---|
| 5 to 10 years | $ 5,689 |
| Thereafter | 1,680 |
| | $ 7,369 |

## Note 20 Trust capital securities

We issued innovative capital instruments, RBC Trust Capital Securities (RBC TruCS), through two structured entities: RBC Capital Trust (Trust) and RBC Capital Trust II (Trust II). Trust II was wound up in 2014 after the redemption of the RBC TruCS Series 2013 (RBC TruCS 2013) on December 31, 2013.

The Trust has issued non-voting RBC TruCS Series 2010, 2011, 2015 and 2008-1 (RBC TruCS 2010, 2011, 2015 and 2008-1). RBC TruCS 2010 and 2011 were redeemed in 2010 and 2011, respectively.

The holders of RBC TruCS 2015 and 2008-1 do not have any conversion rights or any other redemption rights. As a result, upon consolidation of the Trust, RBC TruCS 2015 and 2008-1 are classified as non-controlling interests. Holders of RBC TruCS 2015 and 2008-1 are eligible to receive semi-annual non-cumulative fixed cash distributions until December 31, 2015 and June 30, 2018, respectively, and a floating-rate cash distribution thereafter.

No cash distributions will be payable by the Trust on RBC TruCS if we fail to declare regular dividends (i) on our preferred shares, or (ii) on our common shares if no preferred shares are then outstanding. In this case, the net distributable funds of the Trust will be distributed to us as holders of residual interest in the Trust. Should the Trust fail to pay the semi-annual distributions in full, we will not declare dividends of any kind on any of our preferred or common shares for a specified period of time.

The table below presents the significant terms and conditions of RBC TruCS.

**Significant terms and conditions of RBC Trust Capital Securities**

| | | | | Earliest redemption date | Conversion date | As at | |
|---|---|---|---|---|---|---|---|
| (Millions of Canadian dollars, except for percentage amounts) | Issuance date | Distribution dates | Annual yield | At the option of the issuer | At the option of the holder | October 31 2015 Principal amount | October 31 2014 Principal amount |
| **RBC Capital Trust** (1),(2),(3),(4),(5),(6),(7) | | | | | | | |
| Included in Non-controlling interests | | | | | | | |
| 1,200,000 Trust Capital Securities – Series 2015 | October 28, 2005 | June 30, December 31 | 4.87% (8) | December 31, 2010 | n.a. | $ 1,200 | $ 1,200 |
| 500,000 Trust Capital Securities – Series 2008-1 | April 28, 2008 | June 30, December 31 | 6.82% (8) | June 30, 2013 | n.a. | 500 | 500 |
| **RBC Capital Trust II** (2),(3),(4),(5),(6),(7),(9) | | | | | | | |
| Included in Deposits | | | | | | | |
| 900,000 Trust Capital Securities – Series 2013 (10) | July 23, 2003 | June 30, December 31 | 5.812% | December 31, 2008 | Any time | $ – | $ – |

The significant terms and conditions of the RBC TruCS are as follows:

(1) Subject to the approval of OSFI, the Trust may, on the earliest redemption date specified above, and on any distribution date thereafter, redeem in whole (but not in part) the RBC TruCS 2008-1 and 2015, without the consent of the holders.

(2) Subject to the approval of OSFI, upon occurrence of a special event as defined, prior to the earliest redemption date specified above, the trusts may redeem in whole (but not in part) the RBC TruCS 2008-1, 2013 or 2015 without the consent of the holders.

(3) Issuer Redemption Price: The RBC TruCS 2008-1 may be redeemed for cash equivalent to (i) the Early Redemption Price if the redemption occurs prior to June 30, 2018 or (ii) the Redemption Price if the redemption occurs on or after June 30, 2018. The RBC TruCS 2013 and 2015 may be redeemed for cash equivalent to (i) the Early Redemption Price if the redemption occurs prior to December 31, 2013 and 2015, respectively, or (ii) the Redemption Price if the redemption occurs on or after December 31, 2013 and 2015, respectively. Redemption Price refers to an amount equal to $1,000 plus the unpaid distributions to the redemption date. Early Redemption Price refers to an amount equal to the greater of (i) the Redemption Price and (ii) the price calculated to provide an annual yield, equal to the yield on a Government of Canada bond issued on the redemption date with a maturity date of June 30, 2018, plus 77 basis points, for RBC TruCS 2008-1, and a maturity date of December 31, 2013 and 2015, plus 23 basis points and 19.5 basis points, for RBC TruCS 2013 and 2015, respectively.

(4) Automatic Exchange Event: Without the consent of the holders, each RBC TruCS 2008-1, 2013 and 2015 will be exchanged automatically for 40 of our non-cumulative redeemable First Preferred Shares Series AI, T and Z, respectively, upon occurrence of any one of the following events: (i) proceedings are commenced for our winding-up; (ii) OSFI takes control of us; (iii) we have Tier 1 capital ratio of less than 5% or Total capital ratio of less than 8%; or (iv) OSFI has directed us to increase our capital or provide additional liquidity and we elect such automatic exchange or we fail to comply with such direction. The First Preferred Shares Series AI, T and Z pay semi-annual non-cumulative cash dividends and Series T is convertible at the option of the holder into a variable number of common shares.

(5) From time to time, we purchase some of the innovative capital instruments and hold them temporarily. As at October 31, 2015, we held an insignificant amount of RBC TruCS 2015 (October 31, 2014 –$9 million) and $6 million of the RBC TruCS 2008-1 (October 31, 2014 – $3 million) as treasury holdings which were deducted from regulatory capital.

(6) Regulatory capital: In accordance with OSFI Capital Adequacy Requirements, effective January 2013, RBC TruCS no longer qualify as additional Tier 1 capital due to their lack of non-viability contingent capital terms and conditions. As such, outstanding RBC TruCS are being phased out of regulatory capital in accordance with OSFI guidelines.

(7) Holder Exchange Right: Holders of RBC TruCS 2013 may, at any time, exchange all or part of their holdings for 40 non-cumulative redeemable First Preferred Shares Series U, for each RBC TruCS 2013 held. The First Preferred Shares Series U pay semi-annual non-cumulative cash dividends as and when declared by our Board of Directors and are convertible at the option of the holder into a variable number of common shares. Holders of RBC TruCS 2008-1 and RBC TruCS 2015 do not have similar exchange rights.

(8) The non-cumulative cash distribution on the RBC TruCS 2015 will be 4.87% paid semi-annually until December 31, 2015, and at one half of the sum of 180-day Bankers' Acceptance rate plus 1.5%, thereafter. The non-cumulative cash distribution on the RBC TruCS 2008-1 will be 6.82% paid semi-annually until June 30, 2018, and at one half of the sum of 180-day Bankers' Acceptance rate plus 3.5% thereafter.

(9) Subject to the approval of OSFI, Trust II may, in whole or in part, on the redemption date specified above, and on any distribution date thereafter, redeem any outstanding RBC TruCS 2013 without the consent of the holders.

(10) On December 31, 2013, Trust II redeemed all $900 million principal amount of RBC TruCS 2013 for cash at a redemption price of $1,000 per unit.

n.a. not applicable

## Note 21 Equity

**Share capital**

*Authorized share capital*

Preferred – An unlimited number of First Preferred Shares and Second Preferred Shares without nominal or par value, issuable in series; the aggregate consideration for which all the First Preferred Shares and all the Second Preferred Shares that may be issued may not exceed $20 billion and $5 billion, respectively.

Common – An unlimited number of shares without nominal or par value may be issued.

*Outstanding share capital*

The following table details our common and preferred shares outstanding.

| | As at | | | | | |
|---|---|---|---|---|---|---|
| | **October 31, 2015** | | | October 31, 2014 | | |
| (Millions of Canadian dollars, except the number of shares and dividends per share) | **Number of shares (thousands)** | **Amount** | **Dividends declared per share** | Number of shares (thousands) | Amount | Dividends declared per share |
| **Preferred shares** | | | | | | |
| **First preferred** (1) | | | | | | |
| Non-cumulative, fixed rate | | | | | | |
| Series W | **12,000** | **$ 300** | **$ 1.23** | 12,000 | $ 300 | $ 1.23 |
| Series AA | **12,000** | **300** | **1.11** | 12,000 | 300 | 1.11 |
| Series AB | **12,000** | **300** | **1.18** | 12,000 | 300 | 1.18 |
| Series AC | **8,000** | **200** | **1.15** | 8,000 | 200 | 1.15 |
| Series AD | **10,000** | **250** | **1.13** | 10,000 | 250 | 1.13 |
| Series AE | **10,000** | **250** | **1.13** | 10,000 | 250 | 1.13 |
| Series AF | **8,000** | **200** | **1.11** | 8,000 | 200 | 1.11 |
| Series AG | **10,000** | **250** | **1.13** | 10,000 | 250 | 1.13 |
| Series BH | **6,000** | **150** | **0.58** | – | – | – |
| Series BI | **6,000** | **150** | **0.42** | – | – | – |
| Series BJ | **6,000** | **150** | **–** | – | – | – |
| Non-cumulative, 5-Year Rate Reset | | | | | | |
| Series AJ (2) | **13,579** | **339** | **0.88** | 13,579 | 339 | 0.97 |
| Series AL | **12,000** | **300** | **1.07** | 12,000 | 300 | 1.15 |
| Series AN (3) | **–** | **–** | **–** | – | – | 0.39 |
| Series AP (3) | **–** | **–** | **–** | – | – | 0.39 |
| Series AR (3) | **–** | **–** | **–** | – | – | 0.39 |
| Series AT (4) | **–** | **–** | **–** | – | – | 1.17 |
| Series AV (4) | **–** | **–** | **–** | – | – | 1.17 |
| Series AX (5) | **–** | **–** | **–** | 13,000 | 325 | 1.53 |
| Series AZ | **20,000** | **500** | **1.00** | 20,000 | 500 | 0.50 |
| Series BB | **20,000** | **500** | **0.98** | 20,000 | 500 | 0.46 |
| Series BD | **24,000** | **600** | **0.73** | – | – | – |
| Series BF | **12,000** | **300** | **0.63** | – | – | – |
| Non-cumulative, floating rate | | | | | | |
| Series AK (2) | **2,421** | **61** | **0.67** | 2,421 | 61 | 0.53 |
| | | **$ 5,100** | | | $ 4,075 | |
| **Common shares** | | | | | | |
| Balance at beginning of year | **1,442,233** | **$ 14,511** | | 1,441,056 | $ 14,377 | |
| Issued under the stock option plan (6) | **1,190** | **62** | | 2,723 | 150 | |
| Purchased for cancellation (7) | **–** | **–** | | (1,546) | (16) | |
| Balance at end of year | **1,443,423** | **$ 14,573** | **$ 3.08** | 1,442,233 | $ 14,511 | $ 2.84 |
| **Treasury shares – Preferred shares** | | | | | | |
| Balance at beginning of year | **1** | **$ –** | | 47 | $ 1 | |
| Sales | **4,736** | **117** | | 4,919 | 124 | |
| Purchases | **(4,800)** | **(119)** | | (4,965) | (125) | |
| Balance at end of year | **(63)** | **$ (2)** | | 1 | $ – | |
| **Treasury shares – Common shares** | | | | | | |
| Balance at beginning of year | **892** | **$ 71** | | 666 | $ 41 | |
| Sales | **78,852** | **6,098** | | 70,684 | 5,333 | |
| Purchases | **(79,212)** | **(6,131)** | | (70,458) | (5,303) | |
| Balance at end of year | **532** | **$ 38** | | 892 | $ 71 | |

(1) First Preferred Shares Series were issued at $25 per share.

(2) On February 24, 2014, we issued 2.4 million Non-Cumulative Floating Rate First Preferred Shares, Series AK, totalling $61 million through a holder option, one-for-one conversion of some of our Non-Cumulative 5-Year Rate Reset First Preferred Shares, Series AJ.

(3) On February 24, 2014, we redeemed all issued and outstanding Non-Cumulative 5-Year Rate Reset First Preferred Shares, Series AN (9 million shares), Series AP (11 million shares), and Series AR (14 million shares) for cash at a redemption price of $25 per share.

(4) On August 24, 2014, we redeemed all issued and outstanding Non-Cumulative 5-Year Rate Reset First Preferred Shares, Series AT (11 million shares) and Series AV (16 million shares) for cash at a redemption price of $25 per share.

(5) On November 24, 2014, we redeemed all 13 million of issued and outstanding Non-Cumulative 5-year Rate Reset First Preferred Shares Series AX for cash at a redemption price of $25 per share.

(6) Includes fair value adjustments to stock options of $7 million (2014 – $16 million).

(7) During the year ended October 31, 2015, we did not purchase any common shares for cancellation. During the year ended October 31, 2014, we purchased for cancellation common shares at an average cost of $72.64 per share with a book value of $10.03 per share.

**Significant terms and conditions of preferred shares**

| As at October 31, 2015 | Initial Period Annual Yield | Premium | Current Dividend per share (1) | Earliest redemption date (2) | Issue Date | Redemption price (2), (3) |
|---|---|---|---|---|---|---|
| **Preferred shares** | | | | | | |
| **First preferred** | | | | | | |
| Non-cumulative, fixed rate | | | | | | |
| Series W (4) | 4.90% | | $ .306250 | February 24, 2010 | January 31, 2005 | $ 25.00 |
| Series AA | 4.45% | | .278125 | May 24, 2011 | April 4, 2006 | 25.00 |
| Series AB | 4.70% | | .293750 | August 24, 2011 | July 20, 2006 | 25.00 |
| Series AC | 4.60% | | .287500 | November 24, 2011 | November 1, 2006 | 25.25 |
| Series AD | 4.50% | | .281250 | February 24, 2012 | December 13, 2006 | 25.25 |
| Series AE | 4.50% | | .281250 | February 24, 2012 | January 19, 2007 | 25.25 |
| Series AF | 4.45% | | .278125 | May 24, 2012 | March 14, 2007 | 25.25 |
| Series AG | 4.50% | | .281250 | May 24, 2012 | April 26, 2007 | 25.25 |
| Series BH (5) | 4.90% | | .577260 | November 24, 2020 | June 5, 2015 | 26.00 |
| Series BI (5) | 4.90% | | .419520 | November 24, 2020 | July 22, 2015 | 26.00 |
| Series BJ (5) | 5.25% | | – | February 24, 2021 | October 2, 2015 | 26.00 |
| Non-cumulative, 5-Year Rate Reset (6) | | | | | | |
| Series AJ | 5.00% | 1.93% | .220000 | February 24, 2014 | September 16, 2008 | 25.00 |
| Series AL | 5.60% | 2.67% | .266250 | February 24, 2014 | November 3, 2008 | 25.00 |
| Series AZ (5) | 4.00% | 2.21% | .250000 | May 24, 2019 | January 30, 2014 | 25.00 |
| Series BB (5) | 3.90% | 2.26% | .243750 | August 24, 2019 | June 3, 2014 | 25.00 |
| Series BD (5) | 3.60% | 2.74% | .225000 | May 24, 2020 | January 30, 2015 | 25.00 |
| Series BF (5) | 3.60% | 2.62% | .225000 | November 24, 2020 | March 13, 2015 | 25.00 |
| Non-cumulative, floating rate | | | | | | |
| Series AK (7) | | 1.93% | .156463 | February 24, 2019 | February 24, 2014 | 25.00 |

(1) Non-cumulative preferential dividends of each Series are payable quarterly, as and when declared by the Board of Directors, on or about the 24th day of February, May, August and November.

(2) Subject to the consent of OSFI and the requirements of the *Bank Act* (Canada), we may, on or after the dates specified above, redeem First Preferred Shares. In the case of Series AJ, AL, AZ, BB, BD, BF and AK, these may be redeemed for cash at a price per share of $25 if redeemed on the earliest redemption date and on the same date every fifth year thereafter. In the case of Series W, AA, AB, AC, AD, AE, AF, AG, BH, BI and BJ, these may be redeemed for cash at a price per share of $26 if redeemed during the 12 months commencing on the earliest redemption date and decreasing by $0.25 each 12-month period thereafter to a price per share of $25 if redeemed four years from the earliest redemption date or thereafter.

(3) Subject to the consent of OSFI and the requirements of the *Bank Act* (Canada), we may purchase the First Preferred Shares of each Series for cancellation at the lowest price or prices at which, in the opinion of the Board of Directors, such shares are obtainable.

(4) Subject to the approval of the Toronto Stock Exchange, we may, on or after February 24, 2010, convert First Preferred Shares Series W into our common shares. First Preferred Shares Series W may be converted into that number of common shares determined by dividing the current redemption price by the greater of $2.50 and 95% of the weighted average trading price of common shares at such time.

(5) The preferred shares include non-viability contingency capital (NVCC) provisions, necessary for the shares to qualify as Tier 1 regulatory capital under Basel III. NVCC provisions require the conversion of the instrument into a variable number of common shares in the event that OSFI deems the Bank non-viable or a federal or provincial government in Canada publicly announces that the Bank has accepted or agreed to accept a capital injection. In such an event, each preferred share is convertible into common shares pursuant to an automatic conversion formula with a conversion price based on the greater of: (i) a floor price of $5.00 and (ii) the current market price of our common shares based on the volume weighted average trading price of our common shares on the Toronto Stock Exchange. The number of shares issued is determined by dividing the preferred share value ($25.00 plus declared and unpaid dividends) by the conversion price.

(6) The dividend rate will reset on the earliest redemption date and every fifth year thereafter at a rate equal to the 5-year Government of Canada bond yield plus the premium indicated. The holders have the option to convert their shares into non-cumulative floating rate First Preferred Shares subject to certain conditions on the earliest redemption date and every fifth year thereafter at a rate equal to the three-month Government of Canada Treasury Bill rate plus the premium indicated.

(7) The dividend rate is equal to the three-month Government of Canada Treasury Bill rate plus the premium indicated. The holders have the option to convert their shares into non-cumulative First Preferred Shares, Series AJ subject to certain conditions on February 24, 2019 and every fifth year thereafter.

*Restrictions on the payment of dividends*

We are prohibited by the *Bank Act* (Canada) from declaring any dividends on our preferred or common shares when we are, or would be placed as a result of the declaration, in contravention of the capital adequacy and liquidity regulations or any regulatory directives issued under the Act. We may not pay dividends on our common shares at any time unless all dividends to which preferred shareholders are then entitled have been declared and paid or set apart for payment. We have agreed that if the Trust fails to pay any required distribution on the trust capital securities in full, we will not declare dividends of any kind on any of our preferred or common shares. Refer to Note 20.

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

*Dividend reinvestment plan*

Our dividend reinvestment plan (DRIP) provides common and preferred shareholders with a means to receive additional common shares rather than cash dividends. The plan is only open to shareholders residing in Canada or the United States. The requirements of our DRIP are satisfied through either open market share purchases or shares issued from treasury. During 2015 and 2014, the requirements of our DRIP were satisfied through open market share purchases.

*Shares available for future issuances*

As at October 31, 2015, 43.3 million common shares are available for future issue relating to our DRIP and potential exercise of stock options outstanding. In addition, we may issue up to 38.9 million common shares from treasury under the RBC Umbrella Savings and Securities Purchase Plan that was approved by shareholders on February 26, 2009.

## Note 21 Equity (continued)

**Non-controlling interests**

| (Millions of Canadian dollars) | As at October 31 2015 | As at October 31 2014 |
|---|---|---|
| RBC Trust Capital Securities (1) | | |
| Series 2015 | **$ 1,219** | $ 1,211 |
| Series 2008-1 | **505** | 508 |
| Other | **74** | 94 |
| | **$ 1,798** | $ 1,813 |

(1) As at October 31, 2015, RBC TruCS Series 2015 includes $20 million of accrued interest (October 31, 2014 – $20 million), net of an insignificant amount of treasury holdings (October 31, 2014 – $9 million). Series 2008-1 includes $11 million of accrued interest (October 31, 2014 – $11 million), net of $6 million of treasury holdings (October 31, 2014 – $3 million).

## Note 22 Share-based compensation

**Stock option plans**

We have stock option plans for certain key employees. Under the plans, options are periodically granted to purchase common shares. The exercise price for each grant is determined as the higher of the volume-weighted average of the trading prices per board lot (100 shares) of our common shares on the Toronto Stock Exchange (i) on the day preceding the day of grant; and (ii) the five consecutive trading days immediately preceding the day of grant. The options vest over a four-year period for employees, and are exercisable for a period not exceeding 10 years from the grant date.

The compensation expense recorded for the year ended October 31, 2015, in respect of the stock option plans was $6 million (October 31, 2014 – $7 million; October 31, 2013 – $7 million). The compensation expense related to non-vested options was $3 million at October 31, 2015 (October 31, 2014 – $4 million; October 31, 2013 – $5 million), to be recognized over the weighted average period of 1.8 years (October 31, 2014 – 1.4 years; October 31, 2013 – 1.1 years).

Analysis of the movement in the number and weighted average exercise price of options is set out below:

**A summary of our stock option activity and related information**

| (Canadian dollars per share except share amounts) | October 31, 2015 Number of options (thousands) | October 31, 2015 Weighted average exercise price | October 31, 2014 Number of options (thousands) | October 31, 2014 Weighted average exercise price | October 31, 2013 Number of options (thousands) | October 31, 2013 Weighted average exercise price |
|---|---|---|---|---|---|---|
| Outstanding at beginning of year | **8,579** | **$ 52.36** | 10,604 | $ 50.39 | 12,304 | $ 48.12 |
| Granted | **803** | **78.59** | 705 | 69.17 | 906 | 58.65 |
| Exercised (1), (2) | **(1,190)** | **46.44** | (2,723) | 49.03 | (2,528) | 42.22 |
| Forfeited in the year | **(10)** | **70.25** | (7) | 52.92 | (78) | 53.27 |
| Outstanding at end of year | **8,182** | **$ 55.78** | 8,579 | $ 52.36 | 10,604 | $ 50.39 |
| Exercisable at end of year | **5,231** | **$ 50.75** | 4,987 | $ 49.60 | 5,711 | $ 47.80 |
| Available for grant | **10,649** | | 11,443 | | 12,140 | |

(1) Cash received for options exercised during the year was $55 million (October 31, 2014 – $133 million; October 31, 2013 – $107 million) and the weighted average share price at the date of exercise was $76.87 (October 31, 2014 – $74.27; October 31, 2013 – $63.17).

(2) New shares were issued for all stock options exercised in 2015, 2014 and 2013. See Note 21.

**Options outstanding as at October 31, 2015 by range of exercise price:**

| (Canadian dollars per share except share amounts) | Options outstanding Number outstanding (thousands) | Options outstanding Weighted average exercise price (1) | Options outstanding Weighted average remaining contractual life (years) | Options exercisable Number exercisable (thousands) | Options exercisable Weighted average exercise price (1) |
|---|---|---|---|---|---|
| $35.37 – $48.93 | **1,799** | **$ 43.11** | **4.78** | **1,236** | **$ 40.46** |
| $50.55 – $52.94 | **1,908** | **52.67** | **3.87** | **1,908** | **52.67** |
| $54.99 – $57.90 | **2,087** | **55.09** | **3.40** | **2,087** | **55.09** |
| $58.65 – $78.59 | **2,388** | **68.41** | **8.08** | **–** | **–** |
| | **8,182** | **$ 55.78** | **5.18** | **5,231** | **$ 50.75** |

(1) The weighted average exercise prices have been revised to reflect the conversion of foreign currency-denominated options at the exchange rate as of October 31, 2015.

The weighted average fair value of options granted during the year ended October 31, 2015 was estimated at $6.75 (October 31, 2014 – $7.19; October 31, 2013 – $5.33). This was determined by applying the Black-Scholes model on the date of grant, taking into account the specific terms and conditions under which the options are granted, such as the vesting period and expected share price volatility estimated by considering both historic average share price volatility and implied volatility derived from traded options over our common shares of similar maturity to those of the employee options. The following assumptions were used to determine the fair value of options granted:

**Weighted average assumptions**

| (Canadian dollars per share except percentages) | For the year ended October 31 2015 | October 31 2014 | October 31 2013 |
|---|---|---|---|
| Share price at grant date | **$ 77.58** | $ 68.75 | $ 58.65 |
| Risk-free interest rate | **1.40%** | 1.95% | 1.38% |
| Expected dividend yield | **3.76%** | 3.94% | 4.19% |
| Expected share price volatility | **17%** | 18% | 18% |
| Expected life of option | **6 years** | 6 years | 6 years |

**Employee savings and share ownership plans**

We offer many employees an opportunity to own our common shares through savings and share ownership plans. Under these plans, the employees can generally contribute between 1% and 10% of their annual salary or benefit base for commissioned based employees. For each contribution between 1% and 6%, we will match 50% of the employee contributions in our common shares. For the RBC Dominion Securities Savings Plan, our maximum annual contribution is $4,500 per employee. For the RBC U.K. Share Incentive Plan, our maximum annual contribution is £1,500 per employee. For the year ended October 31, 2015, we contributed $88 million (October 31, 2014 – $85 million; October 31, 2013 – $77 million), under the terms of these plans, towards the purchase of our common shares. As at October 31, 2015, an aggregate of 37 million common shares were held under these plans (October 31, 2014 – 38 million common shares; October 31, 2013 – 38 million common shares).

**Deferred share and other plans**

We offer deferred share unit plans to executives, non-employee directors and to certain key employees. Under these plans, the executives or directors may choose to receive all or a percentage of their annual variable short-term incentive bonus or directors' fee in the form of deferred share units (DSUs). The executives or directors must elect to participate in the plan prior to the beginning of the year. DSUs earn dividend equivalents in the form of additional DSUs at the same rate as dividends on common shares. The participant is not allowed to convert the DSUs until retirement, permanent disability or termination of employment/directorship. The cash value of the DSUs is equivalent to the market value of common shares when conversion takes place.

We have a deferred bonus plan for certain key employees within Capital Markets. The deferred bonus is invested as RBC share units and a specified percentage vests on each of the three anniversary dates following the grant date. Each vested amount is paid in cash and is based on the original number of RBC share units plus accumulated dividends valued using the average closing price of RBC common shares during the five trading days immediately preceding the vesting date.

We offer performance deferred share award plans to certain key employees, all of which vest at the end of three years. Upon vesting, the award is paid in cash and is based on the original number of RBC share units granted plus accumulated dividends valued using the average closing price of RBC common shares during the five trading days immediately preceding the vesting date. A portion of the award under certain plans can be increased or decreased up to 25%, depending on our total shareholder return compared to a defined peer group of global financial institutions. We previously offered deferred compensation to certain employees in the form of common shares that were held in trust and accumulated dividends during the three year vesting period.

We maintain a non-qualified deferred compensation plan for key employees in the United States under an arrangement called the RBC U.S. Wealth Accumulation Plan. This plan allows eligible employees to defer a portion of their annual income and allocate the deferrals among various fund choices, which include a share unit fund that tracks the value of our common shares. Certain deferrals may also be eligible for matching contributions, all of which are allocated to the RBC share unit fund.

Our liabilities for the awards granted under the deferred share and other plans are measured at fair value, determined based on the quoted market price of our common shares. The following tables present our obligations under the deferred share and other plans, and the related compensation expenses (recoveries) recognized for the year.

**Obligation under deferred share and other plans**

| | **October 31, 2015** | | | October 31, 2014 | | | October 31, 2013 | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Units granted during the year** | | **Units outstanding at the end of the year** | Units granted during the year | | Units outstanding at the end of the year | Units granted during the year | | Units outstanding at the end of the year |
| (Millions of Canadian dollars except units and per unit amounts) | **Number granted (thousands)** | **Weighted average fair value** | **Carrying amount** | Number granted (thousands) | Weighted average fair value | Carrying amount | Number granted (thousands) | Weighted average fair value | Carrying amount |
| Deferred share unit plans | **343** | **$ 69.68** | **$ 334** | 315 | $ 71.57 | $ 333 | 265 | $ 60.83 | $ 307 |
| Deferred bonus plan | **5,849** | **75.60** | **1,442** | 5,339 | 78.97 | 1,585 | 5,215 | 69.45 | 1,517 |
| Performance deferred share award plans | **2,049** | **77.69** | **429** | 2,181 | 68.09 | 503 | 2,337 | 58.62 | 440 |
| RBC U.S. Wealth Accumulation Plan | **64** | **79.52** | **313** | 69 | 74.68 | 343 | 374 | 61.23 | 301 |
| Other share-based plans | **879** | **76.44** | **114** | 845 | 70.32 | 118 | 809 | 60.47 | 76 |
| | **9,184** | **$ 75.95** | **$ 2,632** | 8,749 | $ 75.12 | $ 2,882 | 9,000 | $ 65.23 | $ 2,641 |

## Note 22 Share-based compensation (continued)

**Compensation expenses recognized under deferred share and other plans**

| (Millions of Canadian dollars) | For the year ended October 31 2015 | October 31 2014 | October 31 2013 |
|---|---|---|---|
| Deferred share unit plans | **$ (1)** | $ 61 | $ 53 |
| Deferred bonus plan | **(139)** | 121 | 284 |
| Performance deferred share award plans | **135** | 243 | 249 |
| RBC U.S. Wealth Accumulation Plan | **36** | 147 | 211 |
| Other share-based plans | **39** | 65 | 46 |
| | **$ 70** | $ 637 | $ 843 |

## Note 23 Income and expenses from selected financial instruments

Gains and losses arising from financial instruments held at FVTPL, except for those supporting our insurance operations, are reported in Non-interest income. Related interest and dividend income are reported in Net interest income.

**Net gains (losses) from financial instruments held at fair value through profit or loss** (1)

| (Millions of Canadian dollars) | For the year ended October 31 2015 | October 31 2014 | October 31 2013 |
|---|---|---|---|
| **Net gains (losses)** | | | |
| Classified as at fair value through profit or loss (2) | **$ (218)** | $ 922 | $ 875 |
| Designated as at fair value through profit or loss (3) | **750** | (132) | (30) |
| | **$ 532** | $ 790 | $ 845 |
| **By product line** | | | |
| Interest rate and credit | **$ 149** | $ 603 | $ 593 |
| Equities | **(89)** | (190) | (55) |
| Foreign exchange and commodities | **472** | 377 | 307 |
| | **$ 532** | $ 790 | $ 845 |

(1) The following related to our insurance operations are excluded from Non-interest income and included in Insurance premiums, investment and fee income in the Consolidated Statements of Income: Net gains (losses) from financial instruments designated as at FVTPL of $51 million (October 31, 2014 – $515 million; October 31, 2013 – $(496) million).
(2) Excludes derivatives designated in a hedging relationship. Refer to Note 8 for net gains (losses) on these derivatives.
(3) For the year ended October 31, 2015, $1,118 million of net fair value gains on financial liabilities designated as at FVTPL, other than those attributable to changes in our own credit risk, were included in Non-interest income (October 31, 2014 – losses of $414 million).

**Net interest income from financial instruments** (1)

| (Millions of Canadian dollars) | For the year ended October 31 2015 | October 31 2014 | October 31 2013 |
|---|---|---|---|
| **Interest income** | | | |
| Financial instruments held as at fair value through profit or loss | **$ 4,810** | $ 4,246 | $ 3,959 |
| Other categories of financial instruments (2) | **17,919** | 17,773 | 17,189 |
| | **22,729** | 22,019 | 21,148 |
| **Interest expense** | | | |
| Financial instruments held as at fair value through profit or loss | **$ 2,621** | $ 2,198 | $ 2,260 |
| Other categories of financial instruments | **5,337** | 5,705 | 5,639 |
| | **7,958** | 7,903 | 7,899 |
| Net interest income | **$ 14,771** | $ 14,116 | $ 13,249 |

(1) The following related to our insurance operations are excluded from Net-interest income and included in Insurance premiums, investment and fee income in the Consolidated Statements of Income: Interest income of $449 million (October 31, 2014 – $435 million; October 31, 2013 – $470 million), and Interest expense of $3 million (October 31, 2014 – $nil; October 31, 2013 – $nil).
(2) Refer to Note 5 for interest income accrued on impaired financial assets.

**Income from other categories of financial instruments** (1), (2)

| (Millions of Canadian dollars) | For the year ended October 31 2015 | October 31 2014 | October 31 2013 |
|---|---|---|---|
| Net gains (losses) arising from financial instruments measured at amortized cost (3) | **$ (6)** | $ (7) | $ – |
| Net fee income which does not form an integral part of the effective interest rate of financial assets and liabilities | **4,604** | 4,190 | 3,869 |
| Net fee income arising from trust and other fiduciary activities | **9,587** | 9,138 | 7,990 |

(1) Refer to Note 4 for net gains (losses) on AFS securities.
(2) Refer to Note 4 for impairment losses on AFS and held-to-maturity securities, and Note 5 for impairment losses on loans.
(3) Financial instruments measured at amortized cost include held-to-maturity securities, loans and financial liabilities measured at amortized cost.

## Note 24 Income taxes

The components of tax expense are as follows.

| (Millions of Canadian dollars) | For the year ended October 31 2015 | October 31 2014 | October 31 2013 |
|---|---|---|---|
| **Income taxes (recoveries) in Consolidated Statements of Income** | | | |
| Current tax | | | |
| Tax expense for current year | **$ 2,244** | $ 2,858 | $ 2,516 |
| Adjustments for prior years | **91** | (64) | (289) |
| Recoveries arising from previously unrecognized tax loss, tax credit or temporary difference of a prior period | **(5)** | (4) | (2) |
| | **2,330** | 2,790 | 2,225 |
| Deferred tax | | | |
| Origination and reversal of temporary difference | **312** | (156) | (100) |
| Effects of changes in tax rates | **35** | (3) | (1) |
| Adjustments for prior years | **(74)** | 74 | (5) |
| Recoveries arising from previously unrecognized tax loss, tax credit or temporary difference of a prior period | **(6)** | (3) | (46) |
| Write-down | **–** | 4 | 32 |
| | **267** | (84) | (120) |
| | **2,597** | 2,706 | 2,105 |
| **Income taxes (recoveries) in Consolidated Statements of Comprehensive Income and Changes in Equity** | | | |
| Other comprehensive income | | | |
| Net unrealized gains (losses) on available-for-sale securities | **(22)** | 70 | 3 |
| Reclassification of net losses (gains) on available-for-sale securities to income | **(12)** | (12) | (20) |
| Unrealized foreign currency translation gains (losses) | **8** | 5 | 2 |
| Net foreign currency translation gains (losses) from hedging activities | **(1,140)** | (561) | (322) |
| Reclassification of losses (gains) on net investment hedging activities to income | **38** | 1 | – |
| Net gains (losses) on derivatives designated as cash flow hedges | **(193)** | (39) | (4) |
| Reclassification of losses (gains) on derivatives designated as cash flow hedges to income | **117** | 10 | (11) |
| Remeasurements of employee benefit plans | **206** | (88) | 121 |
| Net fair value change due to credit risk on financial liabilities designated as at fair value through profit or loss | **127** | (22) | – |
| Issuance costs | **(7)** | (7) | – |
| | **(878)** | (643) | (231) |
| **Total income taxes** | **$ 1,719** | $ 2,063 | $ 1,874 |

Our effective tax rate changed from 23.1% for 2014 to 20.6% for 2015, principally due to net favourable tax adjustments related to prior years recorded in 2015, which are presented in Other in the table below.

The following is an analysis of the differences between the income tax expense reflected in the Consolidated Statements of Income and the amounts calculated at the Canadian statutory rate.

**Reconciliation to statutory tax rate**

| (Millions of Canadian dollars, except for percentage amounts) | For the year ended October 31, 2015 | | October 31, 2014 | | October 31, 2013 | |
|---|---|---|---|---|---|---|
| Income taxes at Canadian statutory tax rate | **$ 3,320** | **26.3%** | $ 3,080 | 26.3% | $ 2,737 | 26.2% |
| Increase (decrease) in income taxes resulting from | | | | | | |
| Lower average tax rate applicable to subsidiaries | **(116)** | **(0.9)** | (272) | (2.3) | (190) | (1.8) |
| Tax-exempt income from securities | **(452)** | **(3.6)** | (386) | (3.3) | (294) | (2.8) |
| Tax rate change | **35** | **0.3** | (3) | – | (1) | – |
| Effect of previously unrecognized tax loss, tax credit or temporary differences | **(11)** | **(0.1)** | (7) | (0.1) | (48) | (0.5) |
| Other | **(179)** | **(1.4)** | 294 | 2.5 | (99) | (1.0) |
| Income taxes in Consolidated Statements of Income / effective tax rate | **$ 2,597** | **20.6%** | $ 2,706 | 23.1% | $ 2,105 | 20.1% |

Deferred tax assets and liabilities result from tax loss carryforwards and temporary differences between the tax basis of assets and liabilities and their carrying amounts on our Consolidated Balance Sheets.

**Significant components of deferred tax assets and liabilities**

| (Millions of Canadian dollars) | As at October 31, 2015<br>Net Asset November 1, 2014 | Change through equity | Change through profit or loss | Exchange rate differences | Acquisitions/ disposals | Other | Net Asset October 31, 2015 |
|---|---|---|---|---|---|---|---|
| **Net deferred tax asset/(liability)** | | | | | | | |
| Allowance for credit losses | **$ 376** | **$ –** | **$ (2)** | **$ (2)** | **$ –** | **$ –** | **$ 372** |
| Deferred compensation | **1,513** | **–** | **(375)** | **158** | **–** | **–** | **1,296** |
| Business realignment charges | **9** | **–** | **(4)** | **1** | **–** | **–** | **6** |
| Tax loss carryforwards | **44** | **2** | **4** | **4** | **–** | **–** | **54** |
| Deferred income | **120** | **–** | **27** | **–** | **–** | **–** | **147** |
| Available-for-sale securities | **30** | **(8)** | **(13)** | **3** | **–** | **–** | **12** |
| Premises and equipment | **(322)** | **–** | **50** | **2** | **1** | **–** | **(269)** |
| Deferred expense | **(98)** | **9** | **3** | **–** | **–** | **–** | **(86)** |
| Pension and post-employment related | **566** | **(201)** | **46** | **1** | **–** | **–** | **412** |
| Intangibles | **(282)** | **–** | **31** | **(19)** | **–** | **–** | **(270)** |
| Other | **222** | **–** | **(34)** | **10** | **(1)** | **–** | **197** |
| | **$ 2,178** | **$ (198)** | **$ (267)** | **$ 158** | **$ –** | **$ –** | **$ 1,871** |
| **Comprising** | | | | | | | |
| Deferred tax assets | **$ 2,382** | | | | | | **$ 2,072** |
| Deferred tax liabilities | **(204)** | | | | | | **(201)** |
| | **$ 2,178** | | | | | | **$ 1,871** |

| (Millions of Canadian dollars) | As at October 31, 2014<br>Net Asset November 1, 2013 | Change through equity | Change through profit or loss | Exchange rate differences | Acquisitions/ disposals | Other | Net Asset October 31, 2014 |
|---|---|---|---|---|---|---|---|
| **Net deferred tax asset/(liability)** | | | | | | | |
| Allowance for credit losses | $ 413 | $ – | $ (37) | $ – | $ – | $ – | $ 376 |
| Deferred compensation | 1,290 | – | 151 | 72 | – | – | 1,513 |
| Business realignment charges | 6 | – | 3 | – | – | – | 9 |
| Tax loss carryforwards | 62 | – | (19) | 1 | – | – | 44 |
| Deferred income | 42 | – | 78 | – | – | – | 120 |
| Available-for-sale securities | 102 | (49) | (19) | (4) | – | – | 30 |
| Premises and equipment | (227) | – | (99) | 4 | – | – | (322) |
| Deferred expense | (80) | 7 | (25) | – | – | – | (98) |
| Pension and post-employment related | 492 | 88 | (16) | 2 | – | – | 566 |
| Intangibles | (279) | – | 5 | (8) | – | – | (282) |
| Other | 150 | – | 62 | 10 | – | – | 222 |
| | $ 1,971 | $ 46 | $ 84 | $ 77 | $ – | $ – | $ 2,178 |
| **Comprising** | | | | | | | |
| Deferred tax assets | $ 2,141 | | | | | | $ 2,382 |
| Deferred tax liabilities | (170) | | | | | | (204) |
| | $ 1,971 | | | | | | $ 2,178 |

The tax loss carryforwards amount of deferred tax assets relates to losses in our Caribbean, U.K., U.S. and Japanese operations. Deferred tax assets of $54 million were recognized at October 31, 2015 (October 31, 2014 – $44 million) in respect of tax losses incurred in current or preceding years for which recognition is dependent on the projection of future taxable profits. Management's forecasts support the assumption that it is probable that the results of future operations will generate sufficient taxable income to utilize the deferred tax assets. The forecasts rely on continued liquidity and capital support to our business operations, including tax planning strategies implemented in relation to such support.

As at October 31, 2015, unused tax losses, tax credits and deductible temporary differences of $525 million, $356 million and $6 million (October 31, 2014 – $532 million, $267 million and $7 million) available to be offset against potential tax adjustments or future taxable income were not recognized as deferred tax assets. This amount includes unused tax losses of $158 million which expire within one year (October 31, 2014 – $nil), $28 million which expire in two to four years (October 31, 2014 - $167 million), and $339 million which expire after four years (October 31, 2014 – $365 million). There are $11 million of tax credits that will expire in two to four years (October 31, 2014 - $6 million) and $345 million that will expire after four years (October 31, 2014 – $261 million). In addition, there are deductible temporary differences of $1 million that will expire within one year (October 31, 2014 - $nil) and $5 million that will expire after four years (October 31, 2014 – $7 million).

The amount of temporary differences associated with investments in subsidiaries, branches and associates and interests in joint ventures for which deferred tax liabilities have not been recognized in the parent bank is $11.2 billion as at October 31, 2015 (October 31, 2014 – $9.0 billion).

## Note 25 Earnings per share

| (Millions of Canadian dollars, except share and per share amounts) | For the year ended October 31 2015 | October 31 2014 | October 31 2013 |
|---|---|---|---|
| **Basic earnings per share** | | | |
| Net Income | **$ 10,026** | $ 9,004 | $ 8,342 |
| Preferred share dividends | **(191)** | (213) | (253) |
| Net income attributable to non-controlling interest | **(101)** | (94) | (98) |
| Net income available to common shareholders | **9,734** | 8,697 | 7,991 |
| Weighted average number of common shares (in thousands) | **1,442,935** | 1,442,553 | 1,443,735 |
| Basic earnings per share (in dollars) | **$ 6.75** | $ 6.03 | $ 5.53 |
| **Diluted earnings per share** | | | |
| Net income available to common shareholders | **$ 9,734** | $ 8,697 | $ 7,991 |
| Dilutive impact of exchangeable shares | **15** | 21 | 53 |
| Net income available to common shareholders including dilutive impact of exchangeable shares | **9,749** | 8,718 | 8,044 |
| Weighted average number of common shares (in thousands) | **1,442,935** | 1,442,553 | 1,443,735 |
| Stock options (1) | **2,446** | 2,938 | 2,320 |
| Issuable under other share-based compensation plans | **–** | – | 74 |
| Exchangeable shares (2) | **4,128** | 6,512 | 20,400 |
| Average number of diluted common shares (in thousands) | **1,449,509** | 1,452,003 | 1,466,529 |
| Diluted earnings per share (in dollars) | **$ 6.73** | $ 6.00 | $ 5.49 |

(1) The dilutive effect of stock options was calculated using the treasury stock method. When the exercise price of options outstanding is greater than the average market price of our common shares, the options are excluded from the calculation of diluted earnings per share. For the year ended October 31, 2015, an average of 703,808 outstanding options with an average exercise price of $78.59 were excluded from the calculation of diluted earnings per share; for the years ended October 31, 2014 and 2013 – no outstanding options were excluded from the calculation of diluted earnings per share.

(2) Includes exchangeable preferred shares and trust capital securities.

## Note 26 Guarantees, commitments, pledged assets and contingencies

**Guarantees and commitments**

We use guarantees and other off-balance sheet credit instruments to meet the financing needs of our clients.

The table below summarizes our maximum exposure to credit losses related to our guarantees and commitments provided to third parties. The maximum exposure to credit risk relating to a guarantee is the maximum risk of loss if there was a total default by the guaranteed parties, without consideration of possible recoveries under recourse provisions, insurance policies or from collateral held or pledged. The maximum exposure to credit risk relating to a loan commitment is the full amount of the commitment. In both cases, the maximum risk exposure is significantly greater than the amount recognized as a liability in our Consolidated Balance Sheets.

| (Millions of Canadian dollars) | Maximum exposure to credit losses As at October 31 2015 | October 31 2014 |
|---|---|---|
| **Financial guarantees** | | |
| Financial standby letters of credit | **$ 17,494** | $ 17,208 |
| **Commitments to extend credit** | | |
| Backstop liquidity facilities (1) | **40,387** | 32,183 |
| Credit enhancements (1) | **3,348** | 2,530 |
| Documentary and commercial letters of credit | **216** | 180 |
| Other commitments to extend credit | **172,924** | 137,623 |
| **Other credit-related commitments** | | |
| Securities lending indemnifications | **74,239** | 62,319 |
| Performance guarantees | **6,042** | 6,115 |
| Other | **221** | 110 |

(1) Amounts have been revised from those previously reported.

Our credit review process, our policy for requiring collateral security, and the types of collateral security held are generally the same for guarantees and commitments as for loans. Our clients generally have the right to request settlement of, or draw on, our guarantees and commitments within one year. However, certain guarantees can only be drawn if specified conditions are met. These conditions, along with collateral requirements, are described below. We believe that it is highly unlikely that all or substantially all of the guarantees and commitments will be drawn or settled within one year, and contracts may expire without being drawn or settled.

**Financial guarantees**

*Financial standby letters of credit*

Financial standby letters of credit represent irrevocable assurances that we will make payments in the event that a client cannot meet its obligations to the third party. For certain guarantees, the guaranteed party can request payment from us even though the client has not defaulted on its obligations. The term of these guarantees can range up to eight years.

Our policy for requiring collateral security with respect to these instruments and the types of collateral security held is generally the same as for loans. When collateral security is taken, it is determined on an account-by-account basis according to the risk of the borrower and the specifics of the transaction. Collateral security may include cash, securities and other assets pledged.

**Commitments to extend credit**

*Backstop liquidity facilities*

Backstop liquidity facilities are provided to asset-backed commercial paper conduit programs administered by us and third parties, as an alternative source of financing in the event that such programs are unable to access commercial paper markets, or in limited circumstances, when predetermined performance measures of the financial assets owned by these programs are not met. The average remaining term of these liquidity facilities is approximately three years.

Backstop liquidity facilities are also provided to non-asset backed programs such as variable rate demand notes issued by third parties. These standby facilities provide liquidity support to the issuer to buy the notes if the issuer is unable to remarket the notes, as long as the instrument and/or the issuer maintain the investment grade rating.

The terms of the backstop liquidity facilities do not require us to advance money to these programs in the event of bankruptcy or insolvency events and generally do not require us to purchase non-performing or defaulted assets.

*Credit enhancements*

We provide partial credit enhancement to multi-seller programs administered by us to protect commercial paper investors in the event that the collection on the underlying assets, the transaction-specific credit enhancement or the liquidity proves to be insufficient to pay for maturing commercial paper. Each of the asset pools is structured to achieve a high investment-grade credit profile through credit enhancements from us and other third parties related to each transaction. The average remaining term of these credit facilities is approximately three years.

*Documentary and commercial letters of credit*

Documentary and commercial letters of credit, which are written undertakings by us on behalf of a client authorizing a third party to draw drafts on us up to a stipulated amount under specific terms and conditions, are collateralized by the underlying shipment of goods to which they relate.

*Other commitments to extend credit*

Commitments to extend credit represent unused portions of authorizations to extend credit in the form of loans, bankers' acceptances or letters of credit.

**Other credit-related commitments**

*Securities lending indemnifications*

In securities lending transactions, we act as an agent for the owner of a security, who agrees to lend the security to a borrower for a fee, under the terms of a pre-arranged contract. The borrower must fully collateralize the security loaned at all times. As part of this custodial business, an indemnification may be provided to securities lending customers to ensure that the fair value of securities loaned will be returned in the event that the borrower fails to return the borrowed securities and the collateral held is insufficient to cover the fair value of those securities. These indemnifications normally terminate without being drawn upon. The term of these indemnifications varies, as the securities loaned are recallable on demand. Collateral held for our securities lending transactions typically includes cash or securities that are issued or guaranteed by the Canadian government, U.S. government or other OECD countries.

*Performance guarantees*

Performance guarantees represent irrevocable assurances that we will make payments to third-party beneficiaries in the event that a client fails to perform under a specified non-financial contractual obligation. Such obligations typically include works and service contracts, performance bonds, and warranties related to international trade. The term of these guarantees can range up to eight years.

Our policy for requiring collateral security with respect to these instruments and the types of collateral security held is generally the same as for loans. When collateral security is taken, it is determined on an account-by-account basis according to the risk of the borrower and the specifics of the transaction. Collateral security may include cash, securities and other assets pledged.

*Indemnifications*

In the normal course of our operations, we provide indemnifications which are often standard contractual terms to counterparties in transactions such as purchase and sale contracts, fiduciary, agency, licensing, custodial and service agreements, director/officer contracts and leasing transactions. These indemnification agreements may require us to compensate the counterparties for costs incurred as a result of changes in laws and regulations (including tax legislation) or as a result of litigation claims or statutory sanctions that may be suffered by the counterparty as a consequence of the transaction. The terms of these indemnification agreements will vary based on the contract. The nature of the indemnification agreements prevents us from making a reasonable estimate of the maximum potential amount we could be required to pay to counterparties. Historically, we have not made any significant payments under such indemnifications.

*Uncommitted amounts*

Uncommitted amounts represent undrawn credit facilities for which we have the ability to unilaterally withdraw the credit extended to the borrower. These include both retail and commercial commitments. As at October 31, 2015, the total balance of uncommitted amounts was $209 billion (October 31, 2014 – $195 billion).

**Other commitments**

We act as underwriter for certain new issuances under which we alone or together with a syndicate of financial institutions purchase the new issuances for resale to investors. In connection with these activities, our commitments were $353 million as at October 31, 2015 (October 31, 2014 – $1,109 million).

**Pledged assets and collateral**

In the ordinary course of business, we pledge assets and enter in collateral agreements with terms and conditions that are usual and customary to our regular lending, borrowing and trading activities recorded on our Consolidated Balance Sheets. The following are examples of our general terms and conditions on pledged assets and collateral:

- The risks and rewards of the pledged assets reside with the pledgor.
- The pledged asset is returned to the pledgor when the necessary conditions have been satisfied.
- The right of the pledgee to sell or re-pledge the asset is dependent on the specific agreement under which the collateral is pledged.
- If there is no default, the pledgee must return the comparable asset to the pledgor upon satisfaction of the obligation.

We are also required to provide intraday pledges to the Bank of Canada when we use the Large Value Transfer System (LVTS), which is a real-time electronic wire transfer system that continuously processes all Canadian dollar large-value or time-critical payments throughout the day. The pledged assets earmarked for LVTS activities are normally released back to us at the end of the settlement cycle each day. Therefore, the pledged assets amount is not included in the table below. For the year ended October 31, 2015, we had on average of $3.5 billion of assets pledged intraday to the Bank of Canada on a daily basis (October 31, 2014 – $3.1 billion). There are infrequent occasions where we are required to take an overnight advance from the Bank of Canada to cover a settlement requirement, in which case an equivalent value of the pledged assets would be used to secure the advance. There were no overnight advances taken on October 31, 2015 and October 31, 2014.

Details of assets pledged against liabilities and collateral assets held or re-pledged are shown in the following tables:

| | As at | |
|---|---|---|
| (Millions of Canadian dollars) | **October 31 2015** | October 31 2014 |
| **Sources of pledged assets and collateral** | | |
| Bank assets | | |
| Cash and due from banks | **$ –** | $ 243 |
| Interest-bearing deposits with banks | **1** | 90 |
| Loans | **81,397** | 72,191 |
| Securities | **63,761** | 59,476 |
| Other assets | **22,305** | 11,887 |
| | **167,464** | 143,887 |
| Client assets | | |
| Collateral received and available for sale or re-pledging | **232,499** | 189,229 |
| Less: not sold or re-pledged | **(74,471)** | (67,747) |
| | **158,028** | 121,482 |
| | **$ 325,492** | $ 265,369 |
| **Uses of pledged assets and collateral** | | |
| Securities lent | **$ 21,767** | $ 21,550 |
| Securities borrowed | **33,306** | 25,150 |
| Obligations related to securities sold short | **47,658** | 50,345 |
| Obligations related to securities lent or sold under repurchase agreements | **88,834** | 61,184 |
| Securitization | **44,203** | 45,089 |
| Covered bonds | **36,422** | 26,589 |
| Derivative transactions | **27,411** | 17,068 |
| Foreign governments and central banks | **2,770** | 2,167 |
| Clearing systems, payment systems and depositories | **4,017** | 4,947 |
| Other | **19,104** | 11,280 |
| | **$ 325,492** | $ 265,369 |

**Lease commitments**

*Finance lease commitments*

We lease computer equipment from third parties under finance lease arrangements. The leases have various terms, escalation and renewal rights. The future minimum lease payments under the finance leases are as follows:

| | As at | | | | | |
|---|---|---|---|---|---|---|
| | **October 31, 2015** | | | October 31, 2014 | | |
| (Millions of Canadian dollars) | **Total future minimum lease payments** | **Future interest charges** | **Present value of finance lease commitments** | Total future minimum lease payments | Future interest charges | Present value of finance lease commitments |
| **Future minimum lease payments** | | | | | | |
| No later than one year | **$ 38** | **$ (4)** | **$ 34** | $ 59 | $ (6) | $ 53 |
| Later than one year and no later than five years | **22** | **(3)** | **19** | 51 | (6) | 45 |
| | **$ 60** | **$ (7)** | **$ 53** | $ 110 | $ (12) | $ 98 |

The net carrying amount of computer equipment held under finance lease as at October 31, 2015 was $65 million (October 31, 2014 – $113 million).

## Note 26 Guarantees, commitments, pledged assets and contingencies (continued)

*Operating lease commitments*
We are obligated under a number of non-cancellable operating leases for premises and equipment. These leases have various terms, escalation and renewal rights. The minimum future lease payments under non-cancellable operating leases are as follows.

| | As at | | | |
|---|---|---|---|---|
| | **October 31, 2015** | | October 31, 2014 | |
| (Millions of Canadian dollars) | **Land and buildings** | **Equipment** | Land and buildings | Equipment |
| **Future minimum lease payments** | | | | |
| No later than one year | **$ 590** | **$ 131** | $ 536 | $ 134 |
| Later than one year and no later than five years | **1,822** | **80** | 1,663 | 200 |
| Later than five years | **1,811** | **–** | 1,294 | – |
| | **4,223** | **211** | 3,493 | 334 |
| Less: Future minimum sublease payments to be received | **(14)** | **–** | (17) | – |
| **Net future minimum lease payments** | **$ 4,209** | **$ 211** | $ 3,476 | $ 334 |

## Note 27 Litigation

We are a large global institution that is subject to many different complex legal and regulatory requirements that continue to evolve. As a result, Royal Bank of Canada and its subsidiaries are and have been subject to a variety of legal proceedings, including civil claims and lawsuits, regulatory examinations, investigations, audits and requests for information by various governmental regulatory agencies and law enforcement authorities in various jurisdictions. Some of these matters may involve novel legal theories and interpretations and may be advanced under criminal as well as civil statutes, and some proceedings could result in the imposition of civil, regulatory enforcement or criminal penalties. Management reviews the status of all proceedings on an ongoing basis and will exercise its judgment in resolving them in such manner as management believes to be in the Bank's best interest. This is an area of significant judgment and uncertainty and the extent of our financial and other exposure to these proceedings could be material to our results of operations in any particular period. The following is a description of our significant legal proceedings.

*Rural/Metro litigation*
On October 14, 2014, the Delaware Court of Chancery (the Court of Chancery) in a class action brought by former shareholders of Rural/Metro Corporation, held RBC Capital Markets, LLC liable for aiding and abetting a breach of fiduciary duty by three Rural/Metro directors, but did not make an additional award for attorney's fees. A final judgment was entered on February 19, 2015 in the amount of US$93 million plus post-judgment interest. RBC Capital Markets, LLC appealed the Court of Chancery's determination of liability and quantum of damages, and the plaintiffs cross-appealed the ruling on additional attorneys' fees. On November 30, 2015, the Delaware Supreme Court affirmed the Court of Chancery with respect to both the appeal and cross-appeal. RBC Capital Markets, LLC is cooperating with an investigation by the U.S. Securities and Exchange Commission relating to this matter.

*LIBOR regulatory investigations and litigation*
Various regulators and competition and enforcement authorities around the world, including in Canada, the United Kingdom, and the U.S., are conducting investigations related to certain past submissions made by panel banks in connection with the setting of the U.S. dollar London interbank offered rate (LIBOR). These investigations focus on allegations of collusion between the banks that were on the panel to make submissions for certain LIBOR rates. As Royal Bank of Canada is a member of certain LIBOR panels, including the U.S. dollar LIBOR panel, we have been the subject of regulatory demands for information and are cooperating with those investigations. In addition, Royal Bank of Canada and other U.S. dollar panel banks have been named as defendants in private lawsuits filed in the U.S. with respect to the setting of LIBOR including a number of class action lawsuits which have been consolidated before the U.S. District Court for the Southern District of New York (the Court). The complaints in those actions assert claims against us and other panel banks under various U.S. laws, including U.S. antitrust laws, the U.S. Commodity Exchange Act, and state law. The Court has issued five detailed rulings on various motions in the consolidated cases and based on the Court's decisions to date, many of the claims against Royal Bank of Canada have been dismissed; however, these decisions are subject to appeal and the claims that have been dismissed may be refiled based upon the appeal decisions. The parties are currently working with the Court to confirm the cases which remain active.

Based on the facts currently known, it is not possible at this time for us to predict the ultimate outcome of these investigations or proceedings or the timing of their resolution.

*Royal Bank of Canada Trust Company (Bahamas) Limited Proceedings*
On April 13, 2015, a French investigating judge notified Royal Bank of Canada Trust Limited (RBC Bahamas) of the issuance of an *ordonnance de renvoi* referring RBC Bahamas and other unrelated persons to the French *tribunal correctionnel* to face the charge of complicity in estate tax fraud relating to actions taken relating to a trust for which RBC Bahamas serves as trustee. The trial for this matter is expected to commence in January 2016. RBC Bahamas believes that its actions did not violate French law and intends to contest the charge in the French court. Based on the facts currently known, it is not possible to predict the ultimate outcome of this proceeding; however, management believes that its ultimate resolution will not have a material effect on our consolidated financial position, although it may be material to our results of operations in the period it occurs.

*Interchange fees litigation*
Since 2011, seven proposed class actions have been commenced in Canada: *Bancroft-Snell v. Visa Canada Corporation, et al.*, *9085-4886 Quebec Inc. v. Visa Canada Corporation, et al.*, *Coburn and Watson's Metropolitan Home v. Bank of America Corporation, et al.* (*Watson*), *Macaronies Hair Club and Laser Centre Inc. v. BofA Canada Bank, et al.*, *1023926 Alberta Ltd. v. Bank of America Corporation, et al.*, *The Crown & Hand Pub Ltd. v. Bank of America Corporation, et al.*, and *Hello Baby Equipment Inc. v. BofA Canada Bank, et al.* The defendants in each action are VISA Canada Corporation (Visa), MasterCard International Incorporated (MasterCard), Royal Bank of Canada and other financial institutions. The plaintiff class members are Canadian merchants who accept Visa and/or MasterCard branded credit cards for payment. The actions allege,

among other things, that from March 2001 to the present, Visa and MasterCard conspired with their issuing banks and acquirers to set default interchange rates and merchant discount fees and that certain rules (Honour All Cards and No Surcharge) have the effect of increasing the merchant discount fees. The actions include claims of civil conspiracy, breach of the *Competition Act*, interference with economic relations and unjust enrichment. The claims seek unspecified general and punitive damages. In *Watson*, a decision to partially certify the action as a class proceeding was released on March 27, 2014, and was appealed. On August 19, 2015, the British Columbia Court of Appeal struck the plaintiff class representative's cause of action under section 45 of the *Competition Act* and reinstated the plaintiff class representative's cause of action in civil conspiracy by unlawful means, among other rulings. Based on the facts currently known, it is not possible at this time for us to predict the ultimate outcome of this proceeding or the timing of its resolution.

*Foreign Exchange Matters*

On July 2, 2015, the Brazilian civil antitrust authority Administrative Council for Economic Defense (CADE) initiated an administrative proceeding to investigate possible violations of Brazilian antitrust law by a number of banks, including Royal Bank of Canada, regarding foreign exchange trading. The matter is in its initial stages.

On July 31, 2015, RBC Capital Markets, LLC was added as a new defendant in a pending putative class action initially filed in November 2013 in the United States District Court for the Southern District of New York. The action is brought against multiple foreign exchange dealers and alleges collusive behaviour, among other allegations, in foreign exchange trading. The action is in its initial stages as it relates to the new defendants, including RBC Capital Markets, LLC. On September 11, 2015, a class action lawsuit was filed in the Ontario Superior Court of Justice and a motion for authorization of a class action was filed in the Quebec Superior Court, both on behalf of an alleged class of Canadian investors, against Royal Bank of Canada, RBC Capital Markets, LLC and a number of other foreign exchange dealers. The Canadian class actions allege that the defendants conspired to manipulate the prices of currency trades and are in their initial stages. Based on the facts currently known, it is not possible to predict the ultimate outcome of the Foreign Exchange Matters or the timing of their ultimate resolution.

*Wisconsin school districts litigation*

RBC Capital Markets, LLC, RBC Europe, Ltd. and RBC USA Holdco Corporation are defendants in a lawsuit relating to their role in transactions involving investments made by a number of Wisconsin school districts in certain collateralized debt obligations. These transactions were also the subject of a regulatory investigation. In September 2011, we reached a settlement with the Securities and Exchange Commission which was paid to the school districts through a Fair Fund. Based on the facts currently known, it is not possible at this time to predict the ultimate outcome of this proceeding or the timing of its resolution; however, management believes the ultimate resolution of this proceeding will not have a material adverse effect on our consolidated financial position or results of operations.

*Other matters*

We are a defendant in a number of other actions alleging that certain of our practices and actions were improper. The lawsuits involve a variety of complex issues and the timing of their resolution is varied and uncertain. Management believes that we will ultimately be successful in resolving these lawsuits, to the extent that we are able to assess them, without material financial impact to the Bank. This is, however, an area of significant judgment and the potential liability resulting from these lawsuits could be material to our results of operations in any particular period.

Various other legal proceedings are pending that challenge certain of our other practices or actions. While this is an area of significant judgment and some matters are currently inestimable, we consider that the aggregate liability, to the extent that we are able to assess it, resulting from these other proceedings will not be material to our consolidated financial position or results of operations.

## Note 28 Contractual repricing and maturity schedule

The following table details our exposure to interest rate risk. The carrying amounts of financial assets and financial liabilities are reported below based on the earlier of their contractual repricing date or maturity date.

The following table does not incorporate management's expectation of future events where expected repricing or maturity dates differ significantly from the contractual dates. We incorporate these assumptions in the management of interest rate risk exposure. These assumptions include expected repricing of trading instruments and certain loans and deposits. Taking into account these assumptions on the consolidated contractual repricing and maturity schedule at October 31, 2015, would result in a change in the under-one-year gap from $11.5 billion to $82.3 billion.

| | As at October 31, 2015 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| (Millions of Canadian dollars) | Immediately interest rate-sensitive | Under 3 months | 3 to 6 months | 6 to 12 months | 1 to 5 years | Over 5 years | Non-rate-sensitive | Total |
| **Assets** | | | | | | | | |
| Cash and deposits with banks | $ 11,712 | $ 17,162 | $ 17 | $ – | $ – | $ – | $ 6,251 | $ 35,142 |
| Trading securities | 59 | 29,399 | 11,229 | 14,777 | 22,678 | 32,143 | 48,418 | 158,703 |
| Available-for-sale securities | – | 23,406 | 2,865 | 1,194 | 17,387 | 10,103 | 1,850 | 56,805 |
| Assets purchased under reverse repurchase agreements and securities borrowed | 1,467 | 147,194 | 21,242 | 4,157 | – | – | 663 | 174,723 |
| Loans (net of allowance for loan losses) | 179,940 | 70,297 | 21,094 | 25,187 | 162,856 | 8,234 | 4,615 | 472,223 |
| Derivatives | 105,626 | – | – | – | – | – | – | 105,626 |
| Segregated fund net assets | – | – | – | – | – | – | 830 | 830 |
| Other assets | 177 | 22,828 | – | – | – | 106 | 47,045 | 70,156 |
| | $ 298,981 | $ 310,286 | $ 56,447 | $ 45,315 | $ 202,921 | $ 50,586 | $ 109,672 | $ 1,074,208 |
| **Liabilities** | | | | | | | | |
| Deposits | $ 257,456 | $ 166,310 | $ 22,988 | $ 37,906 | $ 104,122 | $ 25,322 | $ 83,123 | $ 697,227 |
| Obligations related to assets sold under repurchase agreements and securities loaned | 1,709 | 78,533 | 1,400 | 1,199 | – | – | 447 | 83,288 |
| Obligations related to securities sold short | 5 | 2,335 | 547 | 664 | 9,580 | 13,447 | 21,080 | 47,658 |
| Derivatives | 107,860 | – | – | – | – | – | – | 107,860 |
| Segregated fund net liabilities | – | – | – | – | – | – | 830 | 830 |
| Other liabilities | 89 | 15,221 | 24 | 57 | 1,790 | 7,193 | 41,665 | 66,039 |
| Subordinated debentures | – | 1,951 | – | – | 4,191 | 1,220 | – | 7,362 |
| Non-controlling interests | – | 1,207 | – | – | 518 | – | 73 | 1,798 |
| Shareholders' equity | – | 700 | 300 | 1,050 | 2,301 | 751 | 57,044 | 62,146 |
| | $ 367,119 | $ 266,257 | $ 25,259 | $ 40,876 | $ 122,502 | $ 47,933 | $ 204,262 | $ 1,074,208 |
| **Total gap** | $ (68,138) | $ 44,029 | $ 31,188 | $ 4,439 | $ 80,419 | $ 2,653 | $ (94,590) | $ – |
| Canadian dollar | $ (51,779) | $ 14,274 | $ 12,805 | $ (678) | $ 109,580 | $ (2,800) | $ (81,403) | $ (1) |
| Foreign currency | (16,359) | 29,755 | 18,383 | 5,117 | (29,161) | 5,453 | (13,187) | 1 |
| **Total gap** | $ (68,138) | $ 44,029 | $ 31,188 | $ 4,439 | $ 80,419 | $ 2,653 | $ (94,590) | $ – |

## Note 29 Related party transactions

**Related parties**
Related parties include associated companies, post-employment benefit plans for the benefit of our employees, key management personnel, the Board of Directors (Directors), close family members of key management personnel and Directors, and entities which are, directly or indirectly, controlled by, jointly controlled by or significantly influenced by key management personnel, Directors or their close family members.

**Key management personnel and Directors**
Key management personnel are defined as those persons having authority and responsibility for planning, directing and controlling our activities, directly or indirectly. They include the senior members of our organization called the Group Executive. The Group Executive is comprised of the President and Chief Executive Officer and individuals that report directly to him, including the Chief Administrative Officer and Chief Financial Officer, Chief Human Resources Officer, Chief Risk Officer, and Group Heads for Wealth Management and Insurance, Capital Markets and Investor & Treasury Services, Technology & Operations, and Personal & Commercial Banking. The Directors do not plan, direct, or control the activities of the entity; they oversee the management of the business and provide stewardship.

**Compensation of key management personnel and Directors**

| | For the year ended | | |
|---|---|---|---|
| (Millions of Canadian dollars) | **October 31 2015** | October 31 2014 (1) | October 31 2013 |
| Salaries and other short-term employee benefits (2) | **$ 21** | $ 22 | $ 23 |
| Post-employment benefits | **2** | 7 | 3 |
| Share-based payments | **37** | 26 | 30 |
| | **$ 60** | $ 55 | $ 56 |

(1) During the year ended October 31, 2014, certain executives who were members of the Bank's Group Executive as at October 31, 2013 left the Bank and therefore, were no longer part of key management personnel. Compensation for the year ended October 31, 2014, attributable to the former executives, including benefits and share based payments relating to awards granted in prior years was $60 million.
(2) Includes the portion of the annual variable short-term incentive bonus that certain executives elected to receive in the form of DSUs. Refer to Note 22 for further details.

**Stock options, stock awards and shares held by key management personnel, Directors and their close family members**

| | As at | | | |
|---|---|---|---|---|
| | **October 31, 2015** | | October 31, 2014 | |
| (Millions of Canadian dollars, except number of shares) | **No. of units held** | **Value** | No. of units held | Value |
| Stock options | **2,494,007** | **$ 44** | 2,472,134 | $ 66 |
| Other non-option stock based awards | **1,485,976** | **111** | 1,447,763 | 116 |
| RBC common and preferred shares | **738,777** | **55** | 686,674 | 55 |
| | **4,718,760** | **$ 210** | 4,606,571 | $ 237 |

**Transactions, arrangements and agreements involving key management personnel, Directors and their close family members**
In the normal course of business, we provide certain banking services to key management personnel, Directors, and their close family members. These transactions were made on substantially the same terms, including interest rates and security, as for comparable transactions with persons of a similar standing and did not involve more than the normal risk of repayment or present other unfavourable features.

As at October 31, 2015, total loans to key management personnel, Directors and their close family members were $7 million (October 31, 2014 – $7 million). No guarantees, pledges or commitments have been given to key management personnel, Directors or their close family members.

**Joint ventures and associates**
In the normal course of business, we provide certain banking and financial services to our joint ventures and associates, including loans, interest and non-interest bearing deposits. These transactions meet the definition of related party transactions and were made on substantially the same terms as for comparable transactions with third-party counterparties.

As at October 31, 2015, loans to joint ventures and associates were $65 million (October 31, 2014 – $57 million) and deposits from joint ventures and associates were $27 million (October 31, 2014 – $14 million). No guarantees have been given to joint ventures or associates.

**Other transactions, arrangements or agreements involving joint ventures or associates**

| | As at or for the year ended | | |
|---|---|---|---|
| (Millions of Canadian dollars) | **October 31 2015** | October 31 2014 | October 31 2013 |
| Commitments and other contingencies | **$ 365** | $ 315 | $ 240 |
| Other fees received for services rendered | **41** | 45 | 47 |
| Other fees paid for services received | **182** | 185 | 191 |

**Restricted net assets**
Certain of our subsidiaries and joint ventures are subject to regulatory requirements of the jurisdictions in which they operate. When these subsidiaries and joint ventures are subject to such requirements, they may be restricted from transferring to us, our share of their assets in the form of cash dividends, loans or advances. At October 31, 2015, restricted net assets of these subsidiaries and joint ventures were $30.8 billion (October 31, 2014 – $16 billion).

## Note 30 Results by business segment

**Composition of business segments**

For management purposes, based on the products and services offered, we are organized into five business segments: Personal & Commercial Banking, Wealth Management, Insurance, Investor & Treasury Services and Capital Markets.

Personal & Commercial Banking is comprised of our personal and business banking operations, and our auto financing and retail investment businesses and operates through four business lines: Personal Financial Services, Business Financial Services, Cards and Payment Solutions (Canadian Banking), and Caribbean & U.S. Banking. In Canada, we provide a broad suite of financial products and services to our individual and business clients through our extensive branch, automated teller machines, online and telephone banking networks, as well as through a large number of proprietary sales professionals. In the Caribbean, we offer a broad range of financial products and services to individuals, business clients and public institutions in targeted markets. In the United States, we serve the cross-border banking needs of Canadian clients within the United States, as well as the banking product needs of our U.S. wealth management clients.

Wealth Management is comprised of Canadian Wealth Management, U.S. & International Wealth Management and Global Asset Management. We serve affluent, high net worth and ultra high net worth clients in Canada, the United States, the United Kingdom, Europe, and Asia with a comprehensive suite of investment, trust, banking, credit and other wealth management solutions. We also provide asset management products and services directly to institutional and individual clients as well as through RBC distribution channels and third-party distributors.

Insurance is comprised of our insurance operations in Canada and globally and operates under two business lines: Canadian Insurance and International Insurance, providing a wide range of life, health, property and casualty, and reinsurance products and solutions. In Canada, we offer our products and services through our proprietary distribution channels, comprised of the field sales force which includes retail insurance branches, our field sales representatives, advice centers and online, as well as through independent insurance advisors and affinity relationships. Outside North America, we operate in reinsurance markets globally offering life, accident and annuity reinsurance products.

Investor & Treasury Services offers global custody, fund and pension administration, as well as an integrated suite of products to institutional investors worldwide. We also provide cash management, correspondent banking and trade finance services to financial institutions globally and funding and liquidity management for RBC as well as other select institutions.

Capital Markets is comprised of a majority of our global wholesale banking businesses providing public and private companies, institutional investors, governments and central banks with a wide range of products and services across our two main business lines: Global Markets and Corporate and Investment Banking. In North America, we offer a full suite of products and services which include corporate and investment banking, equity and debt origination and distribution, and structuring and trading. Outside North America, we have a select presence in the U.K., Europe, and Other international, where we offer a diversified set of capabilities in our key sectors of expertise such as energy, mining and infrastructure.

All other enterprise level activities that are not allocated to these five business segments, such as enterprise funding, securitizations, net charges associated with unattributed capital, and consolidation adjustments, including the elimination of the Taxable equivalent basis (Teb) gross-up amounts, are included in Corporate Support. Teb adjustments gross up Net interest income from certain tax-advantaged sources (Canadian taxable corporate dividends) to their effective tax equivalent value with the corresponding offset recorded in the provision for income taxes. Management believes that these adjustments are necessary for Capital Markets to reflect how it is managed. The use of the Teb adjustments enhances the comparability of revenue across our taxable and tax-advantaged sources. Our use of Teb adjustments may not be comparable to similarly adjusted amounts at other financial institutions. The Teb adjustment for the year ended October 31, 2015 was $570 million (October 31, 2014 – $492 million, October 31, 2013 – $380 million).

**Geographic segments**

For geographic reporting, our segments are grouped into Canada, United States and Other International. Transactions are primarily recorded in the location that best reflects the risk due to negative changes in economic conditions and prospects for growth due to positive economic changes. This location frequently corresponds with the location of the legal entity through which the business is conducted and the location of our clients. Transactions are recorded in the local currency and are subject to foreign exchange rate fluctuations with respect to the movement in the Canadian dollar.

**Management reporting framework**

Our management reporting framework is intended to measure the performance of each business segment as if it were a stand-alone business and reflects the way our business segments are managed. This approach is intended to ensure that our business segments' results reflect all relevant revenue and expenses associated with the conduct of their businesses. Management regularly monitors these segments' results for the purpose of making decisions about resource allocation and performance assessment. These items do not impact our consolidated results.

The expenses in each business segment may include costs or services directly incurred or provided on their behalf at the enterprise level. For other costs not directly attributable to one of our business segments, we use a management reporting framework that uses assumptions, estimates and methodologies for allocating overhead costs and indirect expenses to our business segments and that assists in the attribution of capital and the transfer pricing of funds to our business segments in a manner that fairly and consistently measures and aligns the economic costs with the underlying benefits and risks of that specific business segment. Activities and business conducted between our business segments are generally at market rates. All other enterprise level activities that are not allocated to our five business segments are reported under Corporate Support.

Our assumptions and methodologies used in our management reporting framework are periodically reviewed by management to ensure that they remain valid. The capital attribution methodologies involve a number of assumptions and estimates that are revised periodically.

| (Millions of Canadian dollars) | Personal & Commercial Banking | Wealth Management | Insurance | Investor & Treasury Services | Capital Markets (1) | Corporate Support (1) | Total | Canada | United States | Other International |
|---|---|---|---|---|---|---|---|---|---|---|
| | For the year ended October 31, 2015 | | | | | | | | | |
| Net interest income (2), (3) | $ 10,004 | $ 493 | $ – | $ 818 | $ 3,970 | $ (514) | $ 14,771 | $ 11,538 | $ 1,977 | $ 1,256 |
| Non-interest income | 4,309 | 6,282 | 4,436 | 1,220 | 4,093 | 210 | 20,550 | 10,889 | 4,619 | 5,042 |
| Total revenue | 14,313 | 6,775 | 4,436 | 2,038 | 8,063 | (304) | 35,321 | 22,427 | 6,596 | 6,298 |
| Provision for credit losses | 984 | 46 | – | (1) | 71 | (3) | 1,097 | 933 | 98 | 66 |
| Insurance policyholder benefits, claims and acquisition expense | – | – | 2,963 | – | – | – | 2,963 | 1,976 | – | 987 |
| Non-interest expense | 6,611 | 5,292 | 613 | 1,301 | 4,696 | 125 | 18,638 | 10,139 | 4,762 | 3,737 |
| Net income (loss) before income taxes | 6,718 | 1,437 | 860 | 738 | 3,296 | (426) | 12,623 | 9,379 | 1,736 | 1,508 |
| Income taxes (recoveries) | 1,712 | 396 | 154 | 182 | 977 | (824) | 2,597 | 1,727 | 649 | 221 |
| **Net income** | $ 5,006 | $ 1,041 | $ 706 | $ 556 | $ 2,319 | $ 398 | $ 10,026 | $ 7,652 | $ 1,087 | $ 1,287 |
| Non-interest expense includes: | | | | | | | | | | |
| Depreciation and amortization | $ 345 | $ 157 | $ 16 | $ 54 | $ 28 | $ 639 | $ 1,239 | $ 1,046 | $ 40 | $ 153 |
| Impairment of other intangibles | 1 | 4 | – | – | – | 2 | 7 | 3 | 1 | 3 |
| Restructuring provisions | – | 83 | – | – | – | – | 83 | 25 | 45 | 13 |
| **Total assets** | $ 397,132 | $ 26,891 | $ 14,139 | $ 132,294 | $ 478,289 | $ 25,463 | $ 1,074,208 | $ 584,419 | $ 252,845 | $ 236,944 |
| Total assets include: | | | | | | | | | | |
| Additions to premises and equipment and intangibles | $ 327 | $ 122 | $ 23 | $ 46 | $ 256 | $ 644 | $ 1,418 | $ 1,071 | $ 206 | $ 141 |
| **Total liabilities** | $ 397,157 | $ 26,906 | $ 14,160 | $ 132,275 | $ 478,291 | $ (38,525) | $ 1,010,264 | $ 520,420 | $ 252,970 | $ 236,874 |

| (Millions of Canadian dollars) | Personal & Commercial Banking | Wealth Management | Insurance | Investor & Treasury Services | Capital Markets (1) | Corporate Support (1) | Total | Canada | United States | Other International |
|---|---|---|---|---|---|---|---|---|---|---|
| | For the year ended October 31, 2014 (4) | | | | | | | | | |
| Net interest income (2), (3) | $ 9,743 | $ 469 | $ – | $ 732 | $ 3,485 | $ (313) | $ 14,116 | $ 11,128 | $ 1,697 | $ 1,291 |
| Non-interest income | 3,987 | 5,844 | 4,964 | 1,152 | 3,881 | 164 | 19,992 | 10,488 | 4,257 | 5,247 |
| Total revenue | 13,730 | 6,313 | 4,964 | 1,884 | 7,366 | (149) | 34,108 | 21,616 | 5,954 | 6,538 |
| Provision for credit losses | 1,103 | 19 | – | – | 44 | (2) | 1,164 | 922 | 52 | 190 |
| Insurance policyholder benefits, claims and acquisition expense | – | – | 3,573 | – | – | – | 3,573 | 2,188 | 1 | 1,384 |
| Non-interest expense | 6,563 | 4,800 | 579 | 1,286 | 4,344 | 89 | 17,661 | 9,650 | 4,199 | 3,812 |
| Net income (loss) before income taxes | 6,064 | 1,494 | 812 | 598 | 2,978 | (236) | 11,710 | 8,856 | 1,702 | 1,152 |
| Income taxes (recoveries) | 1,589 | 411 | 31 | 157 | 923 | (405) | 2,706 | 1,983 | 660 | 63 |
| **Net income** | $ 4,475 | $ 1,083 | $ 781 | $ 441 | $ 2,055 | $ 169 | $ 9,004 | $ 6,873 | $ 1,042 | $ 1,089 |
| Non-interest expense includes: | | | | | | | | | | |
| Depreciation and amortization | $ 338 | $ 147 | $ 16 | $ 58 | $ 28 | $ 578 | $ 1,165 | $ 971 | $ 39 | $ 155 |
| Impairment of other intangibles | – | 6 | – | – | 2 | – | 8 | 2 | 6 | – |
| Restructuring provisions | 20 | 16 | – | – | – | – | 36 | – | 16 | 20 |
| **Total assets** | $ 376,188 | $ 27,084 | $ 12,930 | $ 103,822 | $ 400,314 | $ 20,212 | $ 940,550 | $ 496,120 | $ 194,879 | $ 249,551 |
| Total assets include: | | | | | | | | | | |
| Additions to premises and equipment and intangibles | $ 318 | $ 105 | $ 16 | $ 30 | $ 147 | $ 563 | $ 1,179 | $ 924 | $ 154 | $ 101 |
| **Total liabilities** | $ 376,154 | $ 27,022 | $ 12,988 | $ 103,798 | $ 400,114 | $ (34,029) | $ 886,047 | $ 441,607 | $ 194,946 | $ 249,494 |

## Note 30 Results by business segment (continued)

| (Millions of Canadian dollars) | Personal & Commercial Banking | Wealth Management | Insurance | Investor & Treasury Services | Capital Markets (1) | Corporate Support (1) | Total | Canada | United States | Other International |
|---|---|---|---|---|---|---|---|---|---|---|
| | For the year ended October 31, 2013 (4) | | | | | | | | | |
| Net interest income (2), (3) | $ 9,434 | $ 396 | $ – | $ 671 | $ 2,872 | $ (124) | $ 13,249 | $ 10,961 | $ 1,448 | $ 840 |
| Non-interest income | 3,585 | 5,091 | 3,928 | 1,133 | 3,708 | (12) | 17,433 | 8,601 | 3,810 | 5,022 |
| Total revenue | 13,019 | 5,487 | 3,928 | 1,804 | 6,580 | (136) | 30,682 | 19,562 | 5,258 | 5,862 |
| Provision for credit losses | 995 | 51 | – | – | 188 | 3 | 1,237 | 892 | 78 | 267 |
| Insurance policyholder benefits, claims and acquisition expense | – | – | 2,784 | – | – | – | 2,784 | 1,425 | 10 | 1,349 |
| Non-interest expense | 6,168 | 4,219 | 551 | 1,348 | 3,856 | 72 | 16,214 | 9,210 | 3,663 | 3,341 |
| Net income (loss) before income taxes | 5,856 | 1,217 | 593 | 456 | 2,536 | (211) | 10,447 | 8,035 | 1,507 | 905 |
| Income taxes (recoveries) | 1,476 | 331 | (2) | 117 | 836 | (653) | 2,105 | 1,710 | 370 | 25 |
| **Net income** | $ 4,380 | $ 886 | $ 595 | $ 339 | $ 1,700 | $ 442 | $ 8,342 | $ 6,325 | $ 1,137 | $ 880 |
| Non-interest expense includes: | | | | | | | | | | |
| Depreciation and amortization | $ 279 | $ 135 | $ 13 | $ 56 | $ 25 | $ 503 | $ 1,011 | $ 838 | $ 36 | $ 137 |
| Impairment of other intangibles | 1 | – | – | 5 | – | 4 | 10 | 10 | – | – |
| Restructuring provisions | 21 | – | – | 44 | – | – | 65 | 9 | – | 56 |
| **Total assets** | $ 362,932 | $ 23,361 | $ 12,275 | $ 90,621 | $ 358,036 | $ 12,520 | $ 859,745 | $ 494,306 | $ 181,703 | $ 183,736 |
| Total assets include: | | | | | | | | | | |
| Additions to premises and equipment and intangibles | $ 468 | $ 90 | $ 13 | $ 35 | $ 107 | $ 517 | $ 1,230 | $ 966 | $ 132 | $ 132 |
| **Total liabilities** | $ 362,892 | $ 23,306 | $ 12,325 | $ 90,793 | $ 357,872 | $ (36,903) | $ 810,285 | $ 444,781 | $ 181,815 | $ 183,689 |

(1) Taxable equivalent basis (Teb).
(2) Inter-segment revenue and share of profits in joint ventures and associates are not material.
(3) Interest revenue is reported net of interest expense as management relies primarily on net interest income as a performance measure.
(4) Certain amounts have been revised from those previously reported.

**Revenue by business line**

| (Millions of Canadian dollars) | For the year ended October 31 2015 | October 31 2014 | October 31 2013 |
|---|---|---|---|
| Personal Financial Services | **$ 7,634** | $ 7,285 | $ 6,948 |
| Business Financial Services | **3,091** | 3,135 | 2,990 |
| Cards and Payment Solutions | **2,654** | 2,449 | 2,282 |
| Caribbean & U.S. Banking | **934** | 861 | 799 |
| Canadian Wealth Management | **2,226** | 2,186 | 1,889 |
| U.S. & International Wealth Management | **2,729** | 2,430 | 2,225 |
| Global Asset Management | **1,820** | 1,697 | 1,373 |
| Insurance | **4,436** | 4,964 | 3,928 |
| Investor & Treasury services | **2,038** | 1,884 | 1,804 |
| Corporate and Investment Banking | **3,697** | 3,437 | 3,014 |
| Global Markets (1) | **4,477** | 3,896 | 3,314 |
| Other Capital Markets (1) | **(111)** | 33 | 252 |
| Corporate Support | **(304)** | (149) | (136) |
| | **$ 35,321** | $ 34,108 | $ 30,682 |

(1) Certain amounts have been revised from those previously reported.

## Note 31 Nature and extent of risks arising from financial instruments

We are exposed to credit, market and liquidity and funding risks as a result of holding financial instruments. Our risk measurement and objectives, policies and methodologies for managing these risks are disclosed in the shaded text along with those tables specifically marked with an asterisk (*) on pages 56 to 82 of the Management's Discussion and Analysis. These shaded text and tables are an integral part of these Consolidated Financial Statements.

Concentrations of credit risk exist if a number of our clients are engaged in similar activities, are located in the same geographic region or have comparable economic characteristics such that their ability to meet contractual obligations would be similarly affected by changes in economic, political or other conditions.

Concentrations of credit risk indicate the relative sensitivity of our performance to developments affecting a particular industry or geographic location. The amounts of credit exposure associated with certain of our on- and off-balance sheet financial instruments are summarized in the following table.

| | As at October 31, 2015 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| (Millions of Canadian dollars, except percentage amounts) | Canada | % | United States | % | Europe | % | Other International | % | Total |
| **On-balance sheet assets other than derivatives** (1) | **$ 453,650** | **68%** | **$ 110,341** | **17%** | **$ 56,984** | **9%** | **$ 41,453** | **6%** | **$ 662,428** |
| Derivatives before master netting agreement (2), (3) | **20,911** | **11** | **22,877** | **12** | **143,414** | **74** | **7,254** | **3** | **194,456** |
| | **$ 474,561** | **55%** | **$ 133,218** | **16%** | **$ 200,398** | **23%** | **$ 48,707** | **6%** | **$ 856,884** |
| **Off-balance sheet credit instruments** (4) | | | | | | | | | |
| Committed and uncommitted (5) | **$ 239,351** | **57%** | **$ 137,204** | **33%** | **$ 32,638** | **8%** | **$ 10,312** | **2%** | **$ 419,505** |
| Other | **49,740** | **51** | **17,520** | **18** | **29,213** | **30** | **1,523** | **1** | **97,996** |
| | **$ 289,091** | **56%** | **$ 154,724** | **30%** | **$ 61,851** | **12%** | **$ 11,835** | **2%** | **$ 517,501** |

| | As at October 31, 2014 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| (Millions of Canadian dollars, except percentage amounts) | Canada | % | United States | % | Europe | % | Other International | % | Total |
| On-balance sheet assets other than derivatives (1) | $ 422,498 | 72% | $ 79,140 | 14% | $ 46,596 | 8% | $ 36,031 | 6% | $ 584,265 |
| Derivatives before master netting agreement (2), (3) | 12,825 | 9 | 23,039 | 16 | 102,368 | 70 | 7,009 | 5 | 145,241 |
| | $ 435,323 | 60% | $ 102,179 | 14% | $ 148,964 | 20% | $ 43,040 | 6% | $ 729,506 |
| Off-balance sheet credit instruments (4) | | | | | | | | | |
| Committed and uncommitted (5) | $ 224,849 | 62% | $ 102,253 | 28% | $ 28,312 | 8% | $ 7,876 | 2% | $ 363,290 |
| Other | 45,600 | 53 | 14,579 | 17 | 25,023 | 29 | 550 | 1 | 85,752 |
| | $ 270,449 | 60% | $ 116,832 | 26% | $ 53,335 | 12% | $ 8,426 | 2% | $ 449,042 |

(1) Includes assets purchased under reverse repurchase agreements and securities borrowed, loans and customers' liability under acceptances. The largest concentrations in Canada are Ontario at 47% (October 31, 2014 – 46%), the Prairies at 21% (October 31, 2014 – 21%), British Columbia and the territories at 16% (October 31, 2014 – 16%) and Quebec at 11% (October 31, 2014 – 12%). No industry accounts for more than 35% (October 31, 2014 – 33%) of total on-balance sheet credit instruments.
(2) The largest concentration of credit exposure by counterparty type is banks at 29% (October 31, 2014 – 36%).
(3) Excludes credit derivatives classified as other than trading.
(4) Represents financial instruments with contractual amounts representing credit risk.
(5) Retail and wholesale commitments respectively comprise 36% and 64% of our total commitments (October 31, 2014 – 38% and 62%). The largest concentrations in the wholesale portfolio related to Financing products at 15% (October 31, 2014 – 14%), Non-bank financial services at 10% (October 31, 2014 – 9%), Oil and gas at 10% (October 31, 2014 – 9%), Utilities at 9% (October 31, 2014 – 9%), and Real estate and related at 8% (October 31, 2014 – 9%).

## Note 32 Capital management

**Regulatory capital and capital ratios**

OSFI formally establishes risk-based capital and leverage targets for deposit-taking institutions in Canada. We are required to calculate our capital ratios using the Basel III framework. Under Basel III, regulatory capital includes Common Equity Tier 1 (CET1), Tier 1 and Tier 2 capital. CET1 capital mainly consists of common shares, retained earnings and other components of equity. Regulatory adjustments under Basel III include deductions of goodwill and other intangibles, certain deferred tax assets, defined benefit pension fund assets, investments in banking, financial and insurance entities, and the shortfall of provisions to expected losses. Tier 1 capital comprises predominantly CET1, with additional items that consist of capital instruments such as certain preferred shares, and certain non-controlling interests in subsidiaries. Tier 2 capital includes subordinated debentures that meet certain criteria and certain loan loss allowances. Total capital is the sum of CET1, additional Tier 1 capital and Tier 2 capital. Regulatory capital ratios are calculated by dividing CET1, Tier 1 and Total capital by risk-weighted assets.

## Note 32 Capital management (continued)

Beginning this year, the asset-to-capital multiple has been replaced by a leverage ratio. The leverage ratio is calculated by dividing Tier 1 capital by an exposure measure. The exposure measure consists of total assets (excluding items deducted from Tier 1 capital) and certain off-balance sheet items converted into credit exposure equivalents. Adjustments are also made to derivatives and secured financing transactions to reflect credit and other risks. During 2015 and 2014, we complied with all capital and leverage requirements imposed by OSFI.

| | As at | |
|---|---|---|
| (Millions of Canadian dollars, except percentage and multiple amounts) | **October 31 2015** | October 31 2014 |
| **Capital** (1) | | |
| Common Equity Tier 1 capital | **$ 43,715** | $ 36,406 |
| Tier 1 capital | **50,541** | 42,202 |
| Total capital | **58,004** | 50,020 |
| **Risk-weighted assets used in calculation of capital ratios** (1), (2) | | |
| Common Equity Tier 1 capital ratio | **411,756** | 368,594 |
| Tier 1 capital ratio | **412,941** | 369,976 |
| Total capital ratio | **413,957** | 372,050 |
| **Total capital risk-weighted assets** (1) | | |
| Credit risk | **323,870** | 286,327 |
| Market risk | **39,786** | 38,460 |
| Operational risk | **50,301** | 47,263 |
| | **$ 413,957** | $ 372,050 |
| **Capital ratios, leverage ratios and multiples** (1) | | |
| Common Equity Tier 1 capital ratio | **10.6%** | 9.9% |
| Tier 1 capital ratio | **12.2%** | 11.4% |
| Total capital ratio | **14.0%** | 13.4% |
| Leverage ratio (3) | **4.3%** | n.a. |
| Assets-to-capital multiple (4) | **n.a.** | 17.0X |

(1) Capital, risk-weighted assets and capital ratios and multiples are calculated using OSFI Capital Adequacy Requirements. Leverage ratio is calculated using OSFI Leverage Requirements.
(2) Effective the third quarter of 2014, the credit valuation adjustment to our risk-weighted asset calculation implemented in the first quarter of 2014, must reflect different percentages for each tier of capital. This change reflects a phase-in of credit valuation adjustments ending in the fourth quarter of 2018. During this phase-in period, risk-weighted assets for Common Equity Tier 1, Tier 1 and Total capital ratios will be subject to different annual credit valuation adjustment percentages.
(3) Exposure measure as at October 31, 2015 was $1,170 billion.
(4) Beginning this year, the asset-to-capital multiple has been replaced by a leverage ratio. Gross adjusted assets as at October 31, 2014 were $885 billion.
n.a. not applicable

## Note 33 Offsetting financial assets and financial liabilities

Offsetting within our balance sheet may be achieved where financial assets and liabilities are subject to master netting arrangements that provide the currently enforceable right of offset and where there is an intention to settle on a net basis, or realize the assets and liabilities simultaneously. For derivative contracts and repurchase and reverse repurchase arrangements, this is generally achieved when there is a market mechanism for settlement (e.g. central counterparty exchange, or clearing house) which provides daily net settlement of cash flows arising from these contracts. Margin receivables and margin payables are generally offset as they settle simultaneously through a market settlement mechanism. These are generally classified as Other assets or Other liabilities.

Amounts that do not qualify for offsetting include master netting arrangements that only permit outstanding transactions with the same counterparty to be offset in an event of default or occurrence of other predetermined events. Such master netting arrangements include the ISDA Master Agreement or derivative exchange or clearing counterparty agreements for derivative contracts, global master repurchase agreement and global master securities lending agreements for repurchase, reverse repurchase and other similar secured lending and borrowing arrangements.

The amount of the financial collateral received or pledged subject to master netting arrangement or similar agreements but not qualified for offsetting refers to the collateral received or pledged to cover the net exposure between counterparties, by enabling the collateral to be realized in an event of default or the occurrence of other predetermined events. Certain amounts of collateral are restricted from being sold or re-pledged unless there is an event of default or the occurrence of other predetermined events.

The tables below provide the amount of financial instruments that have been offset on the Consolidated Balance Sheets and the amounts that do not qualify for offsetting but are subject to enforceable master netting arrangements or similar agreements. The amounts presented are not intended to represent our actual exposure to credit risk.

**Financial assets subject to offsetting, enforceable master netting arrangements and similar agreements**

| | As at October 31, 2015 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Amounts subject to offsetting and enforceable netting arrangements | | | | | | | |
| | | | | Amounts subject to master netting arrangements or similar agreements but do not qualify for offsetting on the balance sheet (1) | | | | |
| (Millions of Canadian dollars) | Gross amounts of financial assets before balance sheet offsetting | Amounts of financial liabilities offset on the balance sheet | Net amount of financial assets presented on the balance sheet | Impact of master netting agreements | Financial collateral received (2) | Net amount | Amounts not subject to enforceable netting arrangements | Total amount recognized on the balance sheet |
| Assets purchased under reverse repurchase agreements and securities borrowed | **$ 183,493** | **$ 9,846** | **$ 173,647** | **$ 30** | **$ 172,910** | **$ 707** | **$ 1,076** | **$ 174,723** |
| Derivative assets (3) | **185,654** | **87,527** | **98,127** | **71,833** | **14,956** | **11,338** | **7,499** | **105,626** |
| Other financial assets | **1,560** | **1,283** | **277** | **–** | **52** | **225** | **78** | **355** |
| | **$ 370,707** | **$ 98,656** | **$ 272,051** | **$ 71,863** | **$ 187,918** | **$12,270** | **$ 8,653** | **$ 280,704** |

| | As at October 31, 2014 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Amounts subject to offsetting and enforceable netting arrangements | | | | | | | |
| | | | | Amounts subject to master netting arrangements or similar agreements but do not qualify for offsetting on the balance sheet (1) | | | | |
| (Millions of Canadian dollars) | Gross amounts of financial assets before balance sheet offsetting | Amounts of financial liabilities offset on the balance sheet | Net amount of financial assets presented on the balance sheet | Impact of master netting agreements | Financial collateral received (2) | Net amount | Amounts not subject to enforceable netting arrangements | Total amount recognized on the balance sheet |
| Assets purchased under reverse repurchase agreements and securities borrowed | $ 149,348 | $ 14,038 | $ 135,310 | $ 56 | $ 134,985 | $ 269 | $ 270 | $ 135,580 |
| Derivative assets (3) | 136,230 | 57,068 | 79,162 | 60,546 | 8,993 | 9,623 | 8,240 | 87,402 |
| Other financial assets | 1,345 | 1,247 | 98 | – | 70 | 28 | 60 | 158 |
| | $ 286,923 | $ 72,353 | $ 214,570 | $ 60,602 | $ 144,048 | $ 9,920 | $ 8,570 | $ 223,140 |

(1) Financial collateral is reflected at fair value. The amount of financial instruments and financial collateral disclosed is limited to the net balance sheet exposure, and any over-collateralization is excluded from the table.
(2) Includes cash collateral of $11,345 million (October 31, 2014 – $8,719 million) and non-cash collateral of $177 billion (October 31, 2014 – $135 billion).
(3) Includes cash margin of $1,512 million (October 31, 2014 – $1,326 million) which offset against the derivative balance on the balance sheet.

**Financial liabilities subject to offsetting, enforceable master netting arrangements and similar agreements**

| | **As at October 31, 2015** | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Amounts subject to offsetting and enforceable netting arrangements** | | | | | | | |
| | | | | **Amounts subject to master netting arrangements or similar agreements but do not qualify for offsetting on the balance sheet** (1) | | | | |
| (Millions of Canadian dollars) | **Gross amounts of financial liabilities before balance sheet offsetting** | **Amounts of financial assets offset on the balance sheet** | **Net amount of financial liabilities presented on the balance sheet** | **Impact of master netting agreements** | **Financial collateral pledged** (2) | **Net amount** | **Amounts not subject to enforceable netting arrangements** | **Total amount recognized on the balance sheet** |
| Obligations related to assets sold under repurchase agreements and securities loaned | **$ 92,564** | **$ 9,846** | **$ 82,718** | **$ 30** | **$ 82,476** | **$ 212** | **$ 570** | **$ 83,288** |
| Derivative liabilities (3) | **186,400** | **87,960** | **98,440** | **71,833** | **15,060** | **11,547** | **9,420** | **107,860** |
| Other financial liabilities | **2,348** | **1,517** | **831** | **–** | **551** | **280** | **3** | **834** |
| | **$ 281,312** | **$ 99,323** | **$ 181,989** | **$ 71,863** | **$ 98,087** | **$12,039** | **$ 9,993** | **$ 191,982** |

| | As at October 31, 2014 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Amounts subject to offsetting and enforceable netting arrangements | | | | | | | |
| | | | | Amounts subject to master netting arrangements or similar agreements but do not qualify for offsetting on the balance sheet (1) | | | | |
| (Millions of Canadian dollars) | Gross amounts of financial liabilities before balance sheet offsetting | Amounts of financial assets offset on the balance sheet | Net amount of financial liabilities presented on the balance sheet | Impact of master netting agreements | Financial collateral pledged (2) | Net amount | Amounts not subject to enforceable netting arrangements | Total amount recognized on the balance sheet |
| Obligations related to assets sold under repurchase agreements and securities loaned | $ 78,029 | $ 14,038 | $ 63,991 | $ 56 | $ 63,790 | $ 145 | $ 340 | $ 64,331 |
| Derivative liabilities (3) | 135,662 | 56,982 | 78,680 | 60,546 | 9,184 | 8,950 | 10,302 | 88,982 |
| Other financial liabilities | 1,921 | 1,333 | 588 | – | 478 | 110 | 8 | 596 |
| | $ 215,612 | $ 72,353 | $ 143,259 | $ 60,602 | $ 73,452 | $ 9,205 | $ 10,650 | $ 153,909 |

(1) Financial collateral is reflected at fair value. The amount of financial instruments and financial collateral disclosed is limited to the net balance sheet exposure, and any over-collateralization is excluded from the table.
(2) Includes cash collateral of $13,233 million (October 31, 2014 – $7,187 million) and non-cash collateral of $85 billion (October 31, 2014 – $66 billion).
(3) Includes cash margin of $1,277 million (October 31, 2014 – $1,240 million) which offset against the derivative balance on the balance sheet.

## Note 34 Recovery and settlement of on-balance sheet assets and liabilities

The table below presents an analysis of assets and liabilities recorded on our Consolidated Balance Sheets by amounts to be recovered or settled within one year and after one year, as at the balance sheet date, based on contractual maturities and certain other assumptions outlined in the footnotes below. As warranted, we manage the liquidity risk of various products based on historical behavioural patterns that are often not aligned with contractual maturities. Amounts to be recovered or settled within one year, as presented below, may not be reflective of management's long-term view of the liquidity profile of certain balance sheet categories.

| | As at | | | | | |
|---|---|---|---|---|---|---|
| | October 31, 2015 | | | October 31, 2014 (1) | | |
| (Millions of Canadian dollars) | Within one year | After one year | Total | Within one year | After one year | Total |
| **Assets** | | | | | | |
| Cash and due from banks (2) | **$ 10,466** | **$ 1,986** | **$ 12,452** | $ 16,649 | $ 772 | $ 17,421 |
| Interest-bearing deposits with banks | **22,690** | **–** | **22,690** | 7,494 | 905 | 8,399 |
| Securities | | | | | | |
| Trading securities (3) | **149,150** | **9,553** | **158,703** | 141,399 | 9,981 | 151,380 |
| Available-for-sale securities | **12,338** | **44,467** | **56,805** | 12,318 | 35,450 | 47,768 |
| Assets purchased under reverse repurchase agreements and securities borrowed | **172,122** | **2,601** | **174,723** | 133,438 | 2,142 | 135,580 |
| Loans | | | | | | |
| Retail | **92,012** | **256,171** | **348,183** | 78,435 | 255,834 | 334,269 |
| Wholesale | **25,842** | **100,227** | **126,069** | 22,491 | 80,463 | 102,954 |
| Allowance for loan losses | | | **(2,029)** | | | (1,994) |
| Segregated fund net assets | **–** | **830** | **830** | – | 675 | 675 |
| Other | | | | | | |
| Customers' liability under acceptances | **13,446** | **7** | **13,453** | 11,456 | 6 | 11,462 |
| Derivatives (3) | **103,618** | **2,008** | **105,626** | 85,688 | 1,714 | 87,402 |
| Premises and equipment, net | **–** | **2,728** | **2,728** | – | 2,684 | 2,684 |
| Goodwill | **–** | **9,289** | **9,289** | – | 8,647 | 8,647 |
| Other intangibles | **–** | **2,814** | **2,814** | – | 2,775 | 2,775 |
| Investments in joint ventures and associates | **–** | **360** | **360** | – | 295 | 295 |
| Employee benefit assets | **–** | **245** | **245** | – | 138 | 138 |
| Other assets | **35,350** | **5,917** | **41,267** | 24,414 | 6,281 | 30,695 |
| | **$ 637,034** | **$ 439,203** | **$ 1,074,208** | $ 533,782 | $ 408,762 | $ 940,550 |
| **Liabilities** | | | | | | |
| Deposits (4) | **$ 528,109** | **$ 169,118** | **$ 697,227** | $ 451,065 | $ 163,035 | $ 614,100 |
| Segregated fund net liabilities | **–** | **830** | **830** | – | 675 | 675 |
| Other | | | | | | |
| Acceptances | **13,446** | **7** | **13,453** | 11,456 | 6 | 11,462 |
| Obligations related to securities sold short | **41,156** | **6,502** | **47,658** | 46,125 | 4,220 | 50,345 |
| Obligations related to assets sold under repurchase agreements and securities loaned | **82,498** | **790** | **83,288** | 64,331 | – | 64,331 |
| Derivatives (3) | **105,271** | **2,589** | **107,860** | 87,830 | 1,152 | 88,982 |
| Insurance claims and policy benefit liabilities | **97** | **9,013** | **9,110** | 135 | 8,429 | 8,564 |
| Employee benefit liabilities | **–** | **1,969** | **1,969** | – | 2,420 | 2,420 |
| Other liabilities | **28,563** | **12,944** | **41,507** | 25,228 | 12,081 | 37,309 |
| Subordinated debentures | **1,500** | **5,862** | **7,362** | 200 | 7,659 | 7,859 |
| | **$ 800,640** | **$ 209,624** | **$ 1,010,264** | $ 686,370 | $ 199,677 | $ 886,047 |

(1) Certain amounts have been revised from those previously reported.
(2) Cash and due from banks are assumed to be recovered within one year, except for cash balances not available for use by the bank.
(3) Trading securities classified as at FVTPL and trading derivatives not designated in hedging relationships are presented as within one year as this best represents in most instances the short-term nature of our trading activities. Non-trading derivatives designated in hedging relationships are presented according to the recovery or settlement of the related hedged item.
(4) Demand deposits of $312 billion (October 31, 2014 – $289 billion) are presented as within one year due to their being repayable on demand or at short notice on a contractual basis. In practice, these deposits relate to a broad range of individuals and customer-types which form a stable base for our operations and liquidity needs.

## Note 35 Parent company information

The following table presents information regarding the legal entity of Royal Bank of Canada with its subsidiaries presented on an equity accounted basis.

**Condensed Balance Sheets**

| | As at | |
|---|---|---|
| (Millions of Canadian dollars) | **October 31 2015** | October 31 2014 |
| **Assets** | | |
| Cash and due from banks | **$ 3,123** | $ 7,333 |
| Interest-bearing deposits with banks | **15,838** | 5,788 |
| Securities | **130,326** | 111,159 |
| Investments in bank subsidiaries and associated corporations | **22,907** | 20,240 |
| Investments in other subsidiaries and associated corporations | **60,378** | 53,131 |
| Assets purchased under reverse repurchase agreements and securities borrowed | **23,418** | 17,075 |
| Loans, net of allowance for loan losses | **444,169** | 407,440 |
| Net balances due from bank subsidiaries | **19,118** | 10,466 |
| Other assets | **147,330** | 120,052 |
| | **$ 866,607** | $ 752,684 |
| **Liabilities and shareholders' equity** | | |
| Deposits | **$ 566,903** | $ 497,053 |
| Net balances due to other subsidiaries | **66,879** | 56,146 |
| Other liabilities | **163,379** | 138,989 |
| | **797,161** | 692,188 |
| Subordinated debentures | **7,300** | 7,806 |
| Shareholders' equity | **62,146** | 52,690 |
| | **$ 866,607** | $ 752,684 |

**Condensed Statements of Income and Comprehensive Income**

| | For the year ended | | |
|---|---|---|---|
| (Millions of Canadian dollars) | **October 31 2015** | October 31 2014 | October 31 2013 |
| Interest income (1) | **$ 18,287** | $ 18,415 | $ 18,573 |
| Interest expense | **5,785** | 5,882 | 5,795 |
| **Net interest income** | **12,502** | 12,533 | 12,778 |
| Non-interest income (2) | **5,474** | 6,007 | 4,626 |
| **Total revenue** | **17,976** | 18,540 | 17,404 |
| Provision for credit losses | **1,027** | 1,010 | 1,147 |
| Non-interest expense | **8,051** | 7,801 | 7,304 |
| **Income before income taxes** | **8,898** | 9,729 | 8,953 |
| Income taxes | **1,939** | 2,283 | 1,537 |
| **Net income before equity in undistributed income of subsidiaries** | **6,959** | 7,446 | 7,416 |
| Equity in undistributed income of subsidiaries | **3,067** | 1,558 | 926 |
| **Net income** | **10,026** | 9,004 | 8,342 |
| Other comprehensive income, net of taxes | **3,153** | 915 | 696 |
| **Total comprehensive income** | **$ 13,179** | $ 9,919 | $ 9,038 |

(1) Includes dividend income from investments in subsidiaries and associated corporations of $120 million (2014 – $10 million; 2013 – $1,313 million).
(2) Includes share of profit from associated corporations of $15 million (2014 – profit of $7 million; 2013 – loss of $9 million).

## Note 35 Parent company information (continued)

**Condensed Statements of Cash Flows**

| (Millions of Canadian dollars) | For the year ended October 31 2015 | October 31 2014 | October 31 2013 |
|---|---|---|---|
| **Cash flows from operating activities** | | | |
| Net income | **$ 10,026** | $ 9,004 | $ 8,342 |
| Adjustments to determine net cash from operating activities: | | | |
| Change in undistributed earnings of subsidiaries | **(3,067)** | (1,558) | (926) |
| Change in deposits, net of securitizations | **70,802** | 41,428 | 31,183 |
| Change in loans, net of securitizations | **(33,904)** | (22,865) | (18,927) |
| Change in trading securities | **(10,663)** | (4,193) | (19,048) |
| Change in obligations related to assets sold under repurchase agreements and securities loaned | **2,687** | (2,712) | 1,730 |
| Change in assets purchased under reverse repurchase agreements and securities borrowed | **(6,343)** | (2,497) | (3,668) |
| Change in obligations related to securities sold short | **(1,244)** | (1,305) | 388 |
| Other operating activities, net | **(7,845)** | 182 | (8,210) |
| **Net cash from (used in) operating activities** | **20,449** | 15,484 | (9,136) |
| **Cash flows from investing activities** | | | |
| Change in interest-bearing deposits with banks | **(10,050)** | (3,081) | (1,548) |
| Proceeds from sale of available-for-sale securities | **620** | 1,225 | 1,641 |
| Proceeds from maturity of available-for-sale securities | **25,207** | 28,875 | 28,056 |
| Purchases of available-for-sale securities | **(36,408)** | (36,165) | (26,392) |
| Net acquisitions of premises and equipment and other intangibles | **(937)** | (803) | (754) |
| Change in cash invested in subsidiaries | **(978)** | (2,409) | (7,323) |
| Change in net funding provided to subsidiaries | **2,081** | 4,889 | 20,164 |
| Proceeds from sale of associated corporations | **4** | 70 | – |
| **Net cash (used in) from investing activities** | **(20,461)** | (7,399) | 13,844 |
| **Cash flows from financing activities** | | | |
| Issue of subordinated debentures | **1,000** | 2,000 | 2,046 |
| Repayment of subordinated debentures | **(1,700)** | (1,600) | (2,000) |
| Issue of preferred shares | **1,350** | 1,000 | – |
| Issuance costs | **(21)** | (14) | – |
| Redemption of preferred shares | **(325)** | (1,525) | (222) |
| Issue of common shares | **62** | 150 | 121 |
| Common shares purchased for cancellation | **–** | (113) | (408) |
| Dividends paid | **(4,564)** | (4,211) | (3,810) |
| **Net cash used in financing activities** | **(4,198)** | (4,313) | (4,273) |
| **Net change in cash and due from banks** | **(4,210)** | 3,772 | 435 |
| Cash and due from banks at beginning of year | **7,333** | 3,561 | 3,126 |
| **Cash and due from banks at end of year** | **$ 3,123** | $ 7,333 | $ 3,561 |
| **Supplemental disclosure of cash flow information** | | | |
| Amount of interest paid in year | **$ 5,786** | $ 5,814 | $ 5,943 |
| Amount of interest received in year | **18,001** | 18,582 | 17,281 |
| Amount of dividends received in year | **106** | 10 | 1,313 |
| Amount of income taxes paid in year | **1,323** | 1,286 | 265 |

## Note 36 Subsequent events

**Acquisition and disposition**

On November 2, 2015, we completed the acquisition of City National. City National's business will give us an expansion platform for long-term growth in the U.S. By acquiring 100% of the voting equity interests, the acquisition provides us with the opportunity to enhance and complement our existing U.S. businesses in line with our strategic goals. Total consideration of $7.1 billion (US$5.5 billion) at the date of close includes US$2.6 billion in cash, 41.6 million RBC common shares issued at a price of US$57.16 per share, first preferred shares, Series C-1 and Series C-2 with a fair value of US$290 million (par value of US$275 million), issued upon the cancellation of the outstanding City National preferred shares, as well as amounts related to share based compensation. Due to the proximity of the close date to the release date of our Consolidated Financial Statements, we have not finalized the initial accounting for the acquisition as the valuation of assets acquired and liabilities assumed including loans, intangible assets, goodwill, share based compensation and contingent liabilities has not been completed.

On November 4, 2015, we entered into a purchase and sale agreement to sell our trust, custody and fund administration business in the Caribbean to SMP Group Limited. The transaction is subject to customary closing conditions including regulatory approvals.

**Capital and funding transactions**

On November 2, 2015, we redeemed all $1.5 billion outstanding 3.18% subordinated debentures due on November 2, 2015 for 100% of their principal amount plus accrued interest to the redemption date.

On November 16, 2015, we announced our intention to redeem all issued and outstanding $1.2 billion principal amount of RBC TruCS 2015 for cash at a redemption price of $1,000 per unit. The redemption is expected to be completed on December 31, 2015.

## Ten-year statistical review

### Condensed Balance Sheet

| (Millions of Canadian dollars) | IFRS | | | | | CGAAP | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **2015** | 2014 | 2013 | 2012 | 2011 | 2011 | 2010 | 2009 | 2008 | 2007 | 2006 |
| **Assets** | | | | | | | | | | | |
| Cash and due from banks | **$ 12,452** | $ 17,421 | $ 15,550 | $ 12,428 | $ 12,428 | $ 13,247 | $ 8,440 | $ 7,584 | $ 11,086 | $ 4,226 | $ 4,401 |
| Interest-bearing deposits with banks | **22,690** | 8,399 | 9,039 | 10,246 | 6,460 | 12,181 | 13,254 | 8,919 | 20,041 | 11,881 | 10,502 |
| Securities | **215,508** | 199,148 | 182,710 | 161,602 | 167,022 | 179,558 | 183,519 | 177,298 | 171,134 | 178,255 | 184,869 |
| Assets purchased under reverse repurchase agreements and securities borrowed | **174,723** | 135,580 | 117,517 | 112,257 | 84,947 | 84,947 | 72,698 | 41,580 | 44,818 | 64,313 | 59,378 |
| Loans net of allowance | **472,223** | 435,229 | 408,850 | 378,241 | 347,530 | 296,284 | 273,006 | 258,395 | 289,540 | 237,936 | 208,530 |
| Other | **176,612** | 144,773 | 126,079 | 149,180 | 175,446 | 165,485 | 175,289 | 161,213 | 187,240 | 103,735 | 69,100 |
| **Total Assets** | **$ 1,074,208** | $ 940,550 | $ 859,745 | $ 823,954 | $ 793,833 | $ 751,702 | $ 726,206 | $ 654,989 | $ 723,859 | $ 600,346 | $ 536,780 |
| **Liabilities** | | | | | | | | | | | |
| Deposits | **$ 697,227** | $ 614,100 | $ 563,079 | $ 512,244 | $ 479,102 | $ 444,181 | $ 414,561 | $ 378,457 | $ 438,575 | $ 365,205 | $ 343,523 |
| Other | **305,675** | 264,088 | 239,763 | 259,174 | 263,625 | 256,124 | 263,030 | 229,699 | 242,744 | 201,404 | 160,575 |
| Subordinated debentures | **7,362** | 7,859 | 7,443 | 7,615 | 8,749 | 7,749 | 6,681 | 6,461 | 8,131 | 6,235 | 7,103 |
| Trust capital securities | **–** | – | – | – | 894 | – | 727 | 1,395 | 1,400 | 1,400 | 1,383 |
| Preferred shares liabilities | **–** | – | – | – | – | – | – | – | – | 300 | 298 |
| Non-controlling interest in subsidiaries | **–** | n.a. | n.a. | n.a. | n.a. | 1,941 | 2,256 | 2,071 | 2,371 | 1,483 | 1,775 |
| **Total Liabilities** | **1,010,264** | 886,047 | 810,285 | 779,033 | 752,370 | 709,995 | 687,255 | 618,083 | 693,221 | 576,027 | 514,657 |
| **Equity attributable to shareholders** | **62,146** | 52,690 | 47,665 | 43,160 | 39,702 | 41,707 | 38,951 | 36,906 | 30,638 | 24,319 | 22,123 |
| **Non-controlling interest** | **1,798** | 1,813 | 1,795 | 1,761 | 1,761 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| **Total equity** | **63,944** | 54,503 | 49,460 | 44,921 | 41,463 | 41,707 | 38,951 | 36,906 | 30,638 | 24,319 | 22,123 |
| **Total liabilities and equity** | **$ 1,074,208** | $ 940,550 | $ 859,745 | $ 823,954 | $ 793,833 | $ 751,702 | $ 726,206 | $ 654,989 | $ 723,859 | $ 600,346 | $ 536,780 |

### Condensed Income Statement

| (Millions of Canadian dollars) | IFRS | | | | | CGAAP | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **2015** | 2014 | 2013 | 2012 | 2011 | 2011 | 2010 | 2009 | 2008 | 2007 | 2006 |
| Net interest income | **$ 14,771** | $ 14,116 | $ 13,249 | $ 12,439 | $ 11,357 | $ 10,600 | $ 10,338 | $ 10,705 | $ 9,054 | $ 7,700 | $ 6,796 |
| Non-interest income | **20,550** | 19,992 | 17,433 | 16,708 | 16,281 | 16,830 | 15,744 | 15,736 | 12,528 | 14,762 | 13,481 |
| Total revenue | **35,321** | 34,108 | 30,682 | 29,147 | 27,638 | 27,430 | 26,082 | 26,441 | 21,582 | 22,462 | 20,637 |
| Provision for credit losses (PCL) | **1,097** | 1,164 | 1,237 | 1,299 | 1,133 | 975 | 1,240 | 2,167 | 1,595 | 791 | 429 |
| Insurance policyholder benefits, claims and acquisition expense | **2,963** | 3,573 | 2,784 | 3,621 | 3,358 | 3,360 | 3,546 | 3,042 | 1,631 | 2,173 | 2,509 |
| Non-interest expense (NIE) | **18,638** | 17,661 | 16,214 | 14,641 | 14,167 | 14,453 | 13,469 | 13,436 | 12,351 | 12,473 | 11,495 |
| Non-controlling interest | **n.a.** | n.a. | n.a. | n.a. | n.a. | 104 | 99 | 100 | 81 | 141 | 44 |
| Net income from continuing operations | **10,026** | 9,004 | 8,342 | 7,558 | 6,970 | 6,650 | 5,732 | 5,681 | 4,555 | 5,492 | 4,757 |
| Net loss from discontinued operations | **–** | – | – | (51) | (526) | (1,798) | (509) | (1,823) | – | – | (29) |
| Net income | **10,026** | 9,004 | 8,342 | 7,507 | 6,444 | 4,852 | 5,223 | 3,858 | 4,555 | 5,492 | 4,728 |

**Other Statistics – reported**

| (Millions of Canadian dollars, except percentages and per share amounts) | IFRS | | | | | CGAAP | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **2015** | 2014 | 2013 | 2012 | 2011 | 2011 | 2010 | 2009 | 2008 | 2007 | 2006 |
| **PROFITABILITY MEASURES** (1) | | | | | | | | | | | |
| Earnings per shares (EPS) | | | | | | | | | | | |
| – basic | **$ 6.75** | $ 6.03 | $ 5.53 | $ 4.96 | $ 4.25 | $ 3.21 | $ 3.49 | $ 2.59 | $ 3.41 | $ 4.24 | $ 3.65 |
| – diluted | **$ 6.73** | $ 6.00 | $ 5.49 | $ 4.91 | $ 4.19 | $ 3.19 | $ 3.46 | $ 2.57 | $ 3.38 | $ 4.19 | $ 3.59 |
| Return on common equity (ROE) | **18.6%** | 19.0% | 19.7% | 19.6% | 18.7% | 12.9% | 14.9% | 11.9% | 18.1% | 24.7% | 23.5% |
| Return on risk-weighted assets (RWA) (2) | **2.45%** | 2.52% | 2.67% | 2.70% | 2.44% | 1.87% | 2.03% | 1.50% | 1.78% | 2.23% | 2.21% |
| Efficiency ratio (3) | **52.8%** | 51.8% | 52.8% | 50.2% | 51.3% | 52.7% | 51.6% | 50.8% | 57.2% | 55.5% | 55.7% |
| **KEY RATIOS** | | | | | | | | | | | |
| PCL on impaired loans as a % of Average net loans and acceptances | **0.24%** | 0.27% | 0.31% | 0.35% | 0.33% | 0.34% | 0.45% | 0.72% | 0.53% | 0.33% | 0.23% |
| Net interest margin (total average assets) | **1.40%** | 1.56% | 1.56% | 1.55% | 1.52% | 1.49% | 1.59% | 1.64% | 1.39% | 1.33% | 1.35% |
| Non-interest income as a % of total revenue | **58.2%** | 58.6% | 56.8% | 57.3% | 58.9% | 61.4% | 60.4% | 59.5% | 58.0% | 65.7% | 67.1% |
| **SHARE INFORMATION** (1) | | | | | | | | | | | |
| Common shares outstanding (000s) – end of period | **1,443,423** | 1,442,233 | 1,441,056 | 1,445,303 | 1,438,376 | 1,438,376 | 1,424,922 | 1,417,610 | 1,341,260 | 1,276,260 | 1,280,890 |
| Dividends declared per common share | **$ 3.08** | $ 2.84 | $ 2.53 | $ 2.28 | $ 2.08 | $ 2.08 | $ 2.00 | $ 2.00 | $ 2.00 | $ 1.82 | $ 1.44 |
| Dividend yield | **4.1%** | 3.8% | 4.0% | 4.5% | 3.9% | 3.9% | 3.6% | 4.8% | 4.2% | 3.3% | 3.1% |
| Dividend payout ratio (2) | **46%** | 47% | 46% | 46% | 45% | 47% | 52% | 52% | 59% | 43% | 40% |
| Book value per share | **$ 39.51** | $ 33.69 | $ 29.87 | $ 26.52 | $ 24.25 | $ 25.65 | $ 23.99 | $ 22.67 | $ 20.90 | $ 17.49 | $ 16.52 |
| Common share price (RY on TSX) – close, end of period | **$ 74.77** | $ 80.01 | $ 70.02 | $ 56.94 | $ 48.62 | $ 48.62 | $ 54.39 | $ 54.80 | $ 46.84 | $ 56.04 | $ 49.80 |
| Market capitalization (TSX) | **107,925** | 115,393 | 100,903 | 82,296 | 69,934 | 69,934 | 77,502 | 77,685 | 62,825 | 71,522 | 63,788 |
| Market price to book value | **1.89** | 2.38 | 2.34 | 2.15 | 2.00 | 1.90 | 2.27 | 2.42 | 2.24 | 3.20 | 3.01 |
| **CAPITAL MEASURES –CONSOLIDATED** (4) | | | | | | | | | | | |
| Common Equity Tier 1 capital ratio | **10.6%** | 9.9% | 9.6% | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| Tier 1 capital ratio | **12.2%** | 11.4% | 11.7% | 13.1% | n.a. | 13.3% | 13.0% | 13.0% | 9.0% | 9.4% | 9.6% |
| Total capital ratio | **14.0%** | 13.4% | 14.0% | 15.1% | n.a. | 15.3% | 14.4% | 14.2% | 11.0% | 11.5% | 11.9% |
| Assets-to-capital multiple | **n.a.** | 17.0X | 16.6X | 16.7X | n.a. | 16.1X | 16.5X | 16.3X | 20.1X | 20.0X | 19.7X |
| Leverage Ratio | **4.3%** | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |

(1) On April 6, 2006, we paid a stock dividend of one common share on each of our issued and outstanding common shares. The effect was the same as two-for-one split of our common shares. All common share and per share information have been adjusted retroactively for the stock dividend.
(2) Return on risk-weighted assets (RWA) for fiscal 2011 is based on RWA reported under CGAAP and Income reported under IFRS.
(3) Ratios for 2009-2012 represent continuing operations.
(4) Effective 2013 we calculate the capital ratios and multiples using the Basel III (all-in basis) framework unless otherwise stated. 2008-2012 capital ratios and multiples were calculated using the Basel II framework. 2004-2007 capital ratios and 2005-2007 asset-to-capital multiples were calculated using the Basel I framework. Capital ratios and multiples for 2011 were determined under Canadian GAAP.

## Glossary

**Acceptances**
A bill of exchange or negotiable instrument drawn by the borrower for payment at maturity and accepted by a bank. The acceptance constitutes a guarantee of payment by the bank and can be traded in the money market. The bank earns a "stamping fee" for providing this guarantee.

**Allowance for credit losses**
The amount deemed adequate by management to absorb identified credit losses as well as losses that have been incurred but are not yet identifiable as at the balance sheet date. This allowance is established to cover the lending portfolio including loans, acceptances, guarantees, letters of credit, and unfunded commitments. The allowance is increased by the provision for credit losses, which is charged to income and decreased by the amount of write-offs, net of recoveries in the period.

**Alt-A assets**
A term used in the U.S. to describe assets (mainly mortgages) with a borrower risk profile between the prime and subprime categorizations. Categorization of assets as Alt-A (as opposed to prime) varies, such as limited verification or documentation of borrowers' income or a limited credit history.

**Asset-backed securities (ABS)**
Securities created through the securitization of a pool of assets, for example auto loans or credit card loans.

**Assets-to-capital multiple (ACM)**
Total assets plus specified off-balance sheet items, as defined by OSFI, divided by total regulatory capital on a transitional basis. ACM has been replaced in 2015 by the Basel III Leverage Ratio.

**Assets under administration (AUA)**
Assets administered by us, which are beneficially owned by clients, as at October 31, unless otherwise noted. Services provided in respect of assets under administration are of an administrative nature, including safekeeping, collecting investment income, settling purchase and sale transactions, and record keeping.

**Assets under management (AUM)**
Assets managed by us, which are beneficially owned by clients, as at October 31, unless otherwise noted. Services provided in respect of assets under management include the selection of investments and the provision of investment advice. We have assets under management that are also administered by us and included in assets under administration.

**Auction rate securities (ARS)**
Securities issued through structured entities that hold long-term assets funded with long-term debt. In the U.S., these securities are issued by sponsors such as municipalities, student loan authorities or other sponsors through bank-managed auctions.

**Average earning assets**
Average earning assets include interest-bearing deposits with other banks including certain components of cash and due from banks, securities, assets purchased under reverse repurchase agreements and securities borrowed, loans, and excludes segregated fund net assets and other assets. The averages are based on the daily balances for the period.

**Bank-owned life insurance contracts (BOLI)**
Our legacy portfolio includes BOLI where we provided banks with BOLI stable value agreements ("wraps"), which insure the life insurance policy's cash surrender value from market fluctuations on the underlying investments, thereby allowing us to guarantee a minimum tax-exempt return to the counterparty. These wraps allow us to account for the underlying assets on an accrual basis instead of a mark-to-market basis.

**Basis point (bp)**
One one-hundredth of a percentage point (.01%).

**Collateral**
Assets pledged as security for a loan or other obligation. Collateral can take many forms, such as cash, highly rated securities, property, inventory, equipment and receivables.

**Collateralized debt obligation (CDO)**
Securities with multiple tranches that are issued by structured entities and collateralized by debt obligations including bonds and loans. Each tranche offers a varying degree of risk and return so as to meet investor demand.

**Commercial mortgage-backed securities (CMBS)**
Securities created through the securitization of commercial mortgages.

**Commitments to extend credit**
Unutilized amount of credit facilities available to clients either in the form of loans, bankers' acceptances and other on-balance sheet financing, or through off-balance sheet products such as guarantees and letters of credit.

**Common Equity Tier 1 (CET1) capital**
A regulatory Basel III capital measure comprised mainly of common shareholders' equity less regulatory deductions and adjustments for goodwill and intangibles, defined benefit pension fund assets, shortfall in allowances and other specified items.

**Common Equity Tier 1 capital ratio**
A risk-based capital measure calculated as CET1 capital divided by risk-weighted assets.

**Covered bonds**
Full recourse on-balance sheet obligations issued by banks and credit institutions that are also fully collateralized by assets over which investors enjoy a priority claim in the event of an issuer's insolvency.

**Credit default swaps (CDS)**
A derivative contract that provides the purchaser with a one-time payment should the referenced entity/entities default (or a similar triggering event occur).

**Derivative**
A contract between two parties, which requires little or no initial investment and where payments between the parties are dependent upon the movements in price of an underlying instrument, index or financial rate. Examples of derivatives include swaps, options, forward rate agreements and futures. The notional amount of the derivative is the contract amount used as a reference point to calculate the payments to be exchanged between the two parties, and the notional amount itself is generally not exchanged by the parties.

**Dividend payout ratio**
Common dividends as a percentage of net income available to common shareholders.

**Earnings per share (EPS), basic**
Calculated as net income available to common shareholders divided by the average number of shares outstanding.

**Earnings per share (EPS), diluted**
Calculated as net income available to common shareholders divided by the average number of shares outstanding adjusted for the dilutive effects of stock options and other convertible securities.

**Economic capital**
An estimate of the amount of equity capital required to underpin risks. It is calculated by estimating the level of capital that is necessary to support our various businesses, given their risks, consistent with our desired solvency standard and credit ratings. The identified risks for which we calculate Economic Capital are credit, market (trading and non-trading), operational, business, fixed asset, and insurance. Additionally, Economic Capital includes goodwill and intangibles, and allows for diversification benefits across risks and business segments.

**Fair value**
Fair value of a financial instrument is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

**Funding Valuation Adjustment**
Funding valuation adjustments are calculated to incorporate cost and benefit of funding in the valuation of uncollateralized and under-collateralized OTC derivatives. Future expected cash flows of these derivatives are discounted to reflect the cost and benefit of funding the derivatives by using a funding curve, implied volatilities and correlations as inputs.

**Gross-adjusted assets (GAA)**
GAA are used in the calculation of the Assets-to-Capital multiple. They represent our total assets including specified off-balance sheet items and net of prescribed deductions. Off balance sheet items for this calculation are direct credit substitutes, including letters of credit and guarantees, transaction-related contingencies, trade-related contingencies and sale and repurchase agreements. Commencing Q1/15, the Asset-to-capital multiple and GAA have been replaced by with the leverage ratio and leverage ratio exposure respectively.

**Guarantees and standby letters of credit**
These primarily represent irrevocable assurances that a bank will make payments in the event that its client cannot meet its financial obligations to third parties. Certain other guarantees, such as bid and performance bonds, represent non-financial undertakings.

**Hedge**
A risk management technique used to mitigate exposure from market, interest rate or foreign currency exchange risk arising from normal banking operations. The elimination or reduction of such exposure is accomplished by establishing offsetting positions. For example, assets denominated in foreign currencies can be offset with liabilities in the same currencies or through the use of foreign exchange hedging instruments such as futures, options or foreign exchange contracts.

**Hedge funds**
A type of investment fund, marketed to accredited high net worth investors, that is subject to limited regulation and restrictions on its investments compared to retail mutual funds, and that often utilize aggressive strategies such as selling short, leverage, program trading, swaps, arbitrage and derivatives.

**High-quality liquid assets (HQLA)**
Assets are considered to be HQLA if they can be easily and immediately converted into cash at little or no loss of value during a time of stress.

**Home equity products**
This is comprised of residential mortgages and secured personal loans whereby the borrower pledges real estate as collateral.

**International Financial Reporting Standards (IFRS)**
IFRS are principles-based standards, interpretations and the framework adopted by the International Accounting Standards Board.

**Impaired loans**
Loans are classified as impaired when there has been a deterioration of credit quality to the extent that management no longer has reasonable assurance of timely collection of the full amount of principal and interest in accordance with the contractual terms of the loan agreement. Credit card balances are not classified as impaired as they are directly written off after payments are 180 days past due.

**Innovative capital instruments**
Innovative capital instruments are capital instruments issued by structured entities, whose primary purpose is to raise capital. We previously issued innovative capital instruments, RBC Trust Capital Securities (RBC TruCS) and RBC Trust Subordinated Notes (RBC TSNs), through three structured entities: RBC Capital Trust, RBC Capital Trust II and RBC Subordinated Notes Trust. As per OSFI Basel III guidelines, non-qualifying innovative capital instruments treated as additional Tier 1 capital are subject to phase out over a ten year period beginning on January 1, 2013.

**Leverage Ratio**
A Basel III regulatory measure, the ratio divides Tier 1 capital by the sum of total assets plus specified off-balance sheet items.

**Liquidity Coverage Ratio (LCR)**
The Liquidity Coverage Ratio is a Basel III metric that measures the sufficiency of HQLA available to meet net short-term financial obligations over a thirty day period in an acute stress scenario.

**Loan-to-value (LTV) ratio**
Calculated based on the total facility amount for the residential mortgage and homeline product divided by the value of the related residential property.

**Master netting agreement**
An agreement between us and a counterparty designed to reduce the credit risk of multiple derivative transactions through the creation of a legal right of offset of exposure in the event of a default.

**Net interest income**
The difference between what is earned on assets such as loans and securities and what is paid on liabilities such as deposits and subordinated debentures.

**Net interest margin (average assets)**
Net interest income as a percentage of total average assets.

**Net interest margin (on average earning assets)**
Calculated as net interest income divided by average earning assets.

**Normal course issuer bid (NCIB)**
A program for the repurchase of our own shares for cancellation through a stock exchange that is subject to the various rules of the relevant stock exchange and securities commission.

**Notional amount**
The contract amount used as a reference point to calculate payments for derivatives.

**Off-balance sheet financial instruments**
A variety of arrangements offered to clients, which include credit derivatives, written put options, backstop liquidity facilities, stable value products, financial standby letters of credit, performance guarantees, credit enhancements, mortgage loans sold with recourse, commitments to extend credit, securities lending, documentary and commercial letters of credit, note issuances and revolving underwriting facilities, securities lending indemnifications and indemnifications.

**Office of the Superintendent of Financial Institutions Canada (OSFI)**
The primary regulator of federally chartered financial institutions and federally administered pension plans in Canada. OSFI's mission is to safeguard policyholders, depositors and pension plan members from undue loss.

**Operating leverage**
The difference between our revenue growth rate and non-interest expense growth rate.

**Options**
A contract or a provision of a contract that gives one party (the option holder) the right, but not the obligation, to perform a specified transaction with another party (the option issuer or option writer) according to specified terms.

**Primary dealer**
A formal designation provided to a bank or securities broker-dealer permitted to trade directly with a country's central bank. Primary dealers participate in open market operations, act as market-makers of government debt and provide market information and analysis to assist with monetary policy.

**Provision for credit losses (PCL)**
The amount charged to income necessary to bring the allowance for credit losses to a level determined appropriate by management. This includes both specific and general provisions.

**Repurchase agreements**
These involve the sale of securities for cash and the simultaneous repurchase of the securities for value at a later date. These transactions normally do not constitute economic sales and therefore are treated as collateralized financing transactions.

**Residential mortgage-backed securities (RMBS)**
Securities created through the securitization of residential mortgage loans.

**Return on common equity (ROE)**
Net income available to common shareholders, expressed as a percentage of average common equity.

**Reverse repurchase agreements**
These involve the purchase of securities for cash and the simultaneous sale of the securities for value at a later date. These transactions normally do not constitute economic sales and therefore are treated as collateralized financing transactions.

**Risk-weighted assets (RWA)**
Assets adjusted by a regulatory risk-weight factor to reflect the riskiness of on and off-balance sheet exposures. Certain assets are not risk-weighted, but deducted from capital. The calculation is defined by guidelines issued by OSFI. For more details, refer to the Capital management section.

**Securities lending**
Transactions in which the owner of a security agrees to lend it under the terms of a prearranged contract to a borrower for a fee. The borrower must collateralize the security loan at all times. An intermediary such as a bank often acts as agent for the owner of the security. There are two types of securities lending arrangements: lending with and without credit or market risk indemnification. In securities lending without indemnification, the bank bears no risk of loss. For transactions in which the bank provides an indemnification, it bears the risk of loss if the borrower defaults and the value of the collateral declines concurrently.

**Securities sold short**
A transaction in which the seller sells securities and then borrows the securities in order to deliver them to the purchaser upon settlement. At a later date, the seller buys identical securities in the market to replace the borrowed securities.

**Securitization**
The process by which various financial assets are packaged into newly issued securities backed by these assets.

**Structured entities**
A structured entity is an entity in which voting or similar rights are not the dominant factor in deciding who controls the entity, such as when the activities that significantly affect the entity's returns are directed by means of contractual arrangements. Structured entities often have restricted activities, narrow and well defined objectives, insufficient equity to finance their activities, and financing in the form of multiple contractually-linked instruments.

**Standardized Approach**
Risk weights prescribed by OSFI are used to calculate risk-weighted assets for the credit risk exposures. Credit assessments by OSFI-recognized external credit rating agencies of S&P, Moody's, Fitch and DBRS are used to risk-weight our Sovereign and Bank exposures based on the standards and guidelines issued by OSFI. For our Business and Retail exposures, we use the standard risk weights prescribed by OSFI.

**Structured investment vehicle**
Managed investment vehicle that holds mainly highly rated asset-backed securities and funds itself using the short-term commercial paper market as well as the medium-term note (MTN) market.

**Subprime loans**
Subprime lending is the practice of making loans to borrowers who do not qualify for the best market interest rates because of their deficient credit history. Subprime lending carries more risk for lenders due to the combination of higher interest rates for the borrowers, poorer credit histories, and adverse financial situations usually associated with subprime applicants.

**Taxable equivalent basis (teb)**
Income from certain specified tax advantaged sources (eligible Canadian taxable corporate dividends) is increased to a level that would make it comparable to income from taxable sources. There is an offsetting adjustment in the tax provision, thereby generating the same after-tax net income.

**Tier 1 capital**
Tier 1 capital comprises predominantly of CET1 capital, with additional Tier 1 items such as preferred shares, innovative instruments and non-controlling interests in subsidiaries Tier 1 instruments.

**Tier 2 capital**
Tier 2 capital consists mainly of subordinated debentures that meet certain criteria, certain loan loss allowances and non-controlling interests in subsidiaries' Tier 2 instruments.

**Total capital and total capital ratio**
Total capital is defined as the total of Tier 1 and Tier 2 capital. The total capital ratio is calculated by dividing total capital by risk-weighted assets.

**Tranche**
A security class created whereby the risks and returns associated with a pool of assets are packaged into several classes of securities offering different risk and return profiles from those of the underlying asset pool. Tranches are typically rated by ratings agencies, and reflect both the credit quality of underlying collateral as well as the level of protection based on the tranches' relative subordination.

**Trust Capital Securities (RBC TruCS)**
Transferable trust units issued by structured entities RBC Capital Trust or RBC Capital Trust II for the purpose of raising innovative Tier 1 capital.

**Value-at-Risk (VaR)**
A generally accepted risk-measurement concept that uses statistical models based on historical information to estimate within a given level of confidence the maximum loss in market value we would experience in our trading portfolio from an adverse one-day movement in market rates and prices.

## Directors and executive officers

### Directors

**W. Geoffrey Beattie** (2001)
*Toronto, Ontario*
Chief Executive Officer
Generation Capital

**Jacynthe Côté** (2014)
*Montreal, Quebec*
Corporate Director

**Toos N. Daruvala** (2015)
*New York, New York*
Director and Senior Partner
McKinsey & Company

**David F. Denison,** O.C., FCPA, FCA (2012)
*Toronto, Ontario*
Corporate Director

**Richard L. George,** O.C. (2012)
*Calgary, Alberta*
Partner, Novo Investment Group

**Alice D. Laberge** (2005)
*Vancouver, British Columbia*
Corporate Director

**Michael H. McCain** (2005)
*Toronto, Ontario*
President and Chief
Executive Officer
Maple Leaf Foods Inc.

**David I. McKay** (2014)
*Toronto, Ontario*
President and Chief
Executive Officer
Royal Bank of Canada

**Heather Munroe-Blum**, O.C., O.Q.,
Ph.D., FRSC (2011)
*Montreal, Quebec*
Professor Emerita and Principal Emerita
McGill University

**J. Pedro Reinhard** (2000)
*Key Biscayne, Florida*
President
Reinhard & Associates

**Thomas A. Renyi** (2013)
*New Harbor, Maine*
Corporate Director

**Edward Sonshine,** O.Ont., Q.C. (2008)
*Toronto, Ontario*
Chief Executive Officer
RioCan Real Estate
Investment Trust

**Kathleen P. Taylor** (2001)
*Toronto, Ontario*
Chair of the Board
Royal Bank of Canada

**Bridget A. van Kralingen** (2011)
*New York, New York*
Senior Vice President
IBM Global Business Services
IBM Corporation

**Thierry Vandal** (2015)
*New York, New York*
President
Axium Infrastructure US Inc.

**Victor L. Young,** O.C. (1991)
*St. John's, Newfoundland*
*and Labrador*
Corporate Director

The date appearing after the name of each director indicates the year in which the individual became a director.

### Group Executive

**Janice R. Fukakusa,** FCPA, FCA
Chief Administrative Officer and Chief Financial Officer

**Doug Guzman**(1)
Group Head, Wealth Management and Insurance

**Zabeen Hirji**
Chief Human Resources Officer

**Mark Hughes**
Chief Risk Officer

**A. Douglas McGregor**
Group Head, Capital Markets
and Investor & Treasury Services

**David I. McKay**
President and
Chief Executive Officer

**Bruce Ross**
Group Head, Technology & Operations

**Jennifer Tory**
Group Head,
Personal & Commercial Banking

(1) Effective November 1, 2015, Doug Guzman was appointed Group Head, Wealth Management and Insurance, replacing M. George Lewis, who is continuing as a Senior Portfolio Manager, RBC Global Asset Management.

## Principal subsidiaries

| Principal subsidiaries (1) | Principal office address (2) | Carrying value of voting shares owned by the Bank (3) |
|---|---|---|
| **Royal Bank Holding Inc.** | Toronto, Ontario, Canada | $ 48,117 |
| Royal Mutual Funds Inc. | Toronto, Ontario, Canada | |
| RBC Insurance Holdings Inc. | Mississauga, Ontario, Canada | |
| RBC General Insurance Company | Mississauga, Ontario, Canada | |
| RBC Insurance Company of Canada | Mississauga, Ontario, Canada | |
| RBC Life Insurance Company | Mississauga, Ontario, Canada | |
| RBC Direct Investing Inc. | Toronto, Ontario, Canada | |
| RBC Phillips, Hager & North Investment Counsel Inc. | Toronto, Ontario, Canada | |
| R.B.C. Holdings (Bahamas) Limited | Nassau, New Providence, Bahamas | |
| RBC Caribbean Investments Limited | George Town, Grand Cayman, Cayman Islands | |
| Royal Bank of Canada Insurance Company Ltd. | St. Michael, Barbados | |
| Investment Holdings (Cayman) Limited | George Town, Grand Cayman, Cayman Islands | |
| RBC (Barbados) Funding Ltd. | St. Michael, Barbados | |
| RBC Capital Markets Arbitrage S.A. | Luxembourg, Luxembourg | |
| Capital Funding Alberta Limited | Calgary, Alberta, Canada | |
| RBC Global Asset Management Inc. | Toronto, Ontario, Canada | |
| RBC Investor Services Trust | Toronto, Ontario, Canada | |
| RBC Investor Services Bank S.A. | Esch-sur-Alzette, Luxembourg | |
| RBC (Barbados) Trading Bank Corporation | St. James, Barbados | |
| BlueBay Asset Management (Services) Ltd | London, England | |
| **RBC USA Holdco Corporation** (2) | New York, New York, U.S. | 13,558 |
| RBC Capital Markets, LLC (2) | New York, New York, U.S. | |
| RBC Global Asset Management (U.S.) Inc. | Minneapolis, Minnesota, U.S. | |
| **RBC Dominion Securities Limited** | Toronto, Ontario, Canada | 7,326 |
| RBC Dominion Securities Inc. | Toronto, Ontario, Canada | |
| **RBC Holdings (Barbados) Ltd.** | St. Michael, Barbados | 3,479 |
| RBC Financial (Caribbean) Limited | Port of Spain, Trinidad and Tobago | |
| **RBC Finance S.à r.l./B.V.** (2) | Amsterdam, Netherlands | 3,282 |
| RBC Holdings (Luxembourg) S.A R.L. | Luxembourg, Luxembourg | |
| RBC Holdings (Channel Islands) Limited | Jersey, Channel Islands | |
| Royal Bank of Canada (Channel Islands) Limited | Guernsey, Channel Islands | |
| **RBC Capital Trust** | Toronto, Ontario, Canada | 2,133 |
| **RBC Europe Limited** | London, England | 1,860 |
| **Royal Bank Mortgage Corporation** | Toronto, Ontario, Canada | 1,060 |
| **The Royal Trust Company** | Montreal, Quebec, Canada | 572 |
| **RBC Bank (Georgia), National Association** (2) | Atlanta, Georgia, U.S. | 326 |
| **Royal Trust Corporation of Canada** | Toronto, Ontario, Canada | 243 |
| **RBC Covered Bond Guarantor Limited Partnership** | Toronto, Ontario, Canada | 237 |

(1) The Bank directly or indirectly controls each subsidiary.

(2) Each subsidiary is incorporated or organized under the law of the state or country in which the principal office is situated, except for RBC USA Holdco Corporation which is incorporated under the laws of the State of Delaware, U.S., RBC Capital Markets, LLC, which is organized under the laws of the State of Minnesota, U.S. RBC Finance S.à r.l. / B.V. is a company incorporated in the Netherlands with its official seat in Amsterdam, the Netherlands, and place of effective management, central administration, and principal establishment in Luxembourg, Grand Duchy of Luxembourg. RBC Bank (Georgia), National Association is a national banking association organized under the laws of the U.S. with its main office in Atlanta, Georgia and management offices in Raleigh, North Carolina.

(3) The carrying value (in millions of Canadian dollars) of voting shares is stated as the Bank's equity in such investments.

## Shareholder Information

**Corporate headquarters**
Street address:
Royal Bank of Canada
200 Bay Street
Toronto, Ontario M5J 2J5
Canada
Tel: 1-888-212-5533

Mailing address:
P.O. Box 1
Royal Bank Plaza
Toronto, Ontario M5J 2J5
Canada
website: rbc.com

**Transfer Agent and Registrar**
Main Agent:
Computershare Trust
Company of Canada
1500 Robert Bourassa Blvd.
Suite 700
Montreal, Quebec H3A 3S8
Canada
Tel: 1-866-586-7635 (Canada and the U.S.) or 514-982-7555 (International)
Fax: 514-982-7580
website: computershare.com/rbc

Co-Transfer Agent (U.S.):
Computershare Trust
Company, N.A.
250 Royall Street
Canton, Massachusetts 02021
U.S.A.

Co-Transfer Agent (U.K.):
Computershare Investor
Services PLC
Securities Services – Registrars
P.O. Box 82, The Pavilions,
Bridgwater Road,
Bristol BS99 6ZZ
U.K.

**Stock exchange listings**
(Symbol: RY)

Common shares are listed on:
Canada – Toronto Stock
Exchange (TSX)
U.S. – New York Stock Exchange
(NYSE)
Switzerland – Swiss Exchange
(SIX)

All preferred shares are listed on the TSX with the exception of the series C-1 and C-2. The related depository shares of the series C-1 and C-2 preferred shares are listed on the NYSE.

**Valuation day price**
For capital gains purposes, the Valuation Day (December 22, 1971) cost base for our common shares is $7.38 per share. This amount has been adjusted to reflect the two-for-one share split of March 1981 and the two-for-one share split of February 1990. The one-for-one share dividends paid in October 2000 and April 2006 did not affect the Valuation Day value for our common shares.

**Shareholder contacts**
For dividend information, change in share registration or address, lost stock certificates, tax forms, estate transfers or dividend reinvestment, please contact:
Computershare Trust Company of Canada
100 University Avenue, 8th Floor
Toronto, Ontario M5J 2Y1
Canada

Tel: 1-866-586-7635 (Canada and the U.S.) or 514-982-7555 (International)
Fax: 1-888-453-0330 (Canada and the U.S.) or 416-263-9394 (International)
email: service@computershare.com

For other shareholder inquiries, please contact:
Shareholder Relations
Royal Bank of Canada
200 Bay Street
South Tower
Toronto, Ontario M5J 2J5
Canada
Tel: 416-955-7806

**Financial analysts, portfolio managers, institutional investors**
For financial information inquiries, please contact:
Investor Relations
Royal Bank of Canada
200 Bay Street
North Tower
Toronto, Ontario M5J 2W7
Canada
Tel: 416-955-7802

or visit our website at
rbc.com/investorrelations

**Direct deposit service**
Shareholders in Canada and the U.S. may have their RBC common share dividends deposited directly to their bank account by electronic funds transfer. To arrange for this service, please contact our Transfer Agent and Registrar, Computershare Trust Company of Canada.

**Eligible dividend designation**
For purposes of the enhanced dividend tax credit rules contained in the *Income Tax Act* (Canada) and any corresponding provincial and territorial tax legislation, all dividends (and deemed dividends) paid by us to Canadian residents on our common and preferred shares after December 31, 2005, are designated as "eligible dividends".
Unless stated otherwise, all dividends (and deemed dividends) paid by us hereafter are designated as "eligible dividends" for the purposes of such rules.

**2016 Quarterly earnings release dates**

| | |
|---|---|
| First quarter | February 24 |
| Second quarter | May 26 |
| Third quarter | August 24 |
| Fourth quarter | November 30 |

**2016 Annual Meeting**
The Annual Meeting of Common Shareholders will be held on Wednesday, April 6, 2016, at 9:30am (Eastern Time) at the Mount Royal Centre, Auditorium, 2200 Mansfield Street, Montreal, Quebec, Canada.

Information contained in or otherwise accessible through the websites mentioned in this report to shareholders does not form a part of this report. All references to websites are inactive textual references and are for your information only.

Trademarks used in this report include the LION & GLOBE Symbol, ROYAL BANK OF CANADA, RBC, RBC ASSET MANAGEMENT, RBC BLUE WATER PROJECT, RBC CAPITAL TRUST, RBC GLOBAL ASSET MANAGEMENT, RBC INSURANCE, RBC NEWCOMER ADVANTAGE, RBC TSNs, RBC TruCS, RBC WALLET, RBC WEALTH MANAGEMENT, AVION and CHEQUE-PRO which are trademarks of Royal Bank of Canada used by Royal Bank of Canada and/or by its subsidiaries under license. All other trademarks mentioned in this report, which are not the property of Royal Bank of Canada, are owned by their respective holders.

**Dividend dates for 2016**
Subject to approval by the Board of Directors

| | Ex-dividend dates | Record dates | Payment dates |
|---|---|---|---|
| Common and preferred shares series W, AA, AB, AC, AD, AE, AF, AG, AJ, AK, AL, AZ, BB, BD, BF, BH, BI, and BJ | January 22 | January 26 | February 24 |
| | April 21 | April 25 | May 24 |
| | July 22 | July 26 | August 24 |
| | October 24 | October 26 | November 24 |
| Preferred shares series C-1 (US$) | February 3 | February 5 | February 15 |
| | April 29 | May 3 | May 13 |
| | August 3 | August 5 | August 15 |
| | November 2 | November 4 | November 14 |
| Preferred shares series C-2 (US$) | January 27 | January 29 | February 8 |
| | April 27 | April 29 | May 9 |
| | July 27 | July 29 | August 8 |
| | October 26 | October 28 | November 7 |

**Governance**
A summary of the significant ways in which corporate governance practices followed by RBC differ from corporate governance practices required to be followed by U.S. domestic companies under the NYSE listing standards is available on our website at rbc.com/governance.

**Exhibit 3**

**Consent of Independent Registered Public Accounting Firm**

We consent to the incorporation by reference in Registration Statement Nos. 333-12036, 333-12050, 333-13052, 333-13112, 333-14144, 333-110953, 333-117922, 333-178350, 333-207754, 333-207750 and 333-207748 on Form S-8, Nos. 333-203433 and 333-203567 on Form F-3 and No. 333-202632 on the post-effective amendment #1 on Form F-3 to Form F-4 of our reports dated December 1, 2015 relating to the consolidated financial statements of Royal Bank of Canada and the effectiveness of Royal Bank of Canada's internal control over financial reporting appearing in this Annual Report on Form 40-F of Royal Bank of Canada for the year ended October 31, 2015.

/s/ Deloitte LLP
Chartered Professional Accountants
Licensed Public Accountants
Toronto, Canada
December 2, 2015

# **RBC** Code of Conduct

## A message from Dave McKay President and CEO

### Building Trust - RBC and You

Why do banks matter? Banks hold a unique and important position in society. They facilitate personal and business financial transactions, match saving and borrowing needs, and help domestic and international markets function. They provide financial advice help manage risks and are vital for economic growth. As large businesses themselves, banks invest in technologies, innovation, businesses, communities and, most importantly, people.

Banks hold this fundamental position in our society because of the trust others place in them. It's crucial that clients, employees, investors, communities, and regulators have confidence that banks act fairly and ethically.

RBC has a long tradition of serving clients well. Our reputation for trust, integrity and excellence began in Halifax nearly 150 years ago and now spans the full range of countries where we operate.

RBC's reputation is rooted in our history, culture and commitment to always doing what's right. Trust is built with every interaction - through what we say and what we do. Every time each of us deals with clients, community members and each other, we reinforce the trust that is integral to our success.

People expect more from their bank today. RBC's reputation for doing what's right is more valuable than ever. It helps us differentiate our bank and build relationships with clients and communities.

Our Values and Code of Conduct guide us and set expectations for ethical behaviour and decision-making. They help us decide how we serve our clients and how we interact with each other. Our Code protects employees, clients and RBC by providing a common understanding of what's acceptable and what's not. In short, the Code is a resource that helps us understand what's expected and why.

We are all responsible for protecting and enhancing RBC's reputation by following our Code of Conduct. It's also important that we support one another in doing what's right, including feeling empowered to challenge situations we believe are wrong.

Please read the Code carefully, discuss what it means with your manager and colleagues, and ask questions to ensure you understand it and what it requires of you.

You represent RBC both on and off the job. You embody our values, culture and brand in all that you do. You keep RBC a leader in a changing world by relying on enduring beliefs – our Values of service, teamwork, responsibility, diversity and integrity, and our dedication to our clients, our communities and each other. Great workplaces simply don't exist without great people. It all starts with you.

**Dave McKay, President and CEO**

# Our Vision and Values

RBC's Values define what we stand for everywhere we do business. They are reflected in our behaviour and the way we build relationships and deliver value to all our stakeholders — clients, employees, shareholders, communities and others we deal with. Guided by our shared Values and united in a common purpose, we can achieve our strategic goals and accomplish great results. We demonstrate our Vision of **Always Earning the Right to Be Our Clients' First Choice** by living our Values in the decisions and actions we take every day. These five Values set the tone for our culture and unify us across geographies and businesses:

## SERVICE

**We provide excellent service to clients and each other.**

- Build strong and enduring client relationships
- Seek to understand what RBC clients need and offer advice and solutions that are right for them
- Be known as an organization that cares about people, is approachable and delivers excellent value

## TEAMWORK

**We believe in each other and work together to succeed.**

- Have confidence and trust in the capabilities and intentions of our colleagues across RBC
- Share knowledge and learn from each other
- Focus on doing what's best for RBC clients and the organization

## RESPONSIBILITY

**We take personal responsibility for high performance.**

- Knowing we each can make a difference, take personal responsibility for our own results and those of RBC
- Always reach higher, go farther and achieve more than our competitors

## DIVERSITY

**We embrace diversity for growth and innovation.**

- Grow as individuals and as an organization by respecting and leveraging our similarities and differences
- Draw upon the resources of our businesses, geographies, markets and people, to generate ideas and solutions that break new ground

## INTEGRITY

**We build trust through integrity in everything we do.**

- Do what we say we will do
- Earn the trust and loyalty of both RBC clients and our colleagues
- Base relationships on respect and fairness in all our dealings
- Demonstrate integrity through our actions by always doing what's right

**At RBC we bring these Values to life every day — continuing to earn the trust of RBC's clients and ensuring our strong reputation for doing what's right.**

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Publication date: December 2, 2014

# 1. Our Culture of Integrity

## 1.1 Living Our Values and Acting with Integrity

RBC is a values-based organization. Respect for each other, RBC clients and our commitments to all our stakeholders are rooted in our Values. RBC's Code of Conduct (the "Code") incorporates RBC's Values, and in particular our Value of Integrity, to guide our day-to-day actions and decisions so we can always do the right thing.

Throughout the Code, "RBC" means Royal Bank of Canada and all its subsidiaries and affiliates.

## 1.2 Our Culture of Integrity — Doing What's Right

Every day our actions demonstrate not only our Value of excellent service to clients, but also our personal commitments. We each have a responsibility to be truthful, respect others, and comply with laws, regulations and RBC's policies. (In the Code, the word "policy" includes policies, procedures and standards.) Over many years RBC has earned trust and a reputation for doing what's right through the actions of those who work here. A continued strong focus on doing what's right will sustain and build on that trust — the cornerstone of the financial services industry and our relationships with clients and communities.

We do business across the globe, and each one of us has a responsibility to behave with integrity so that we can continue to serve clients and generate value for RBC's shareholders. More than simply being aware of our Values and following our Code, we need to make them an integral part of how we operate day to day. This will ensure we tell the truth, respect others, uphold the law and comply with policies and practices. These behaviours are the foundation for our culture of integrity and doing what's right.

**Tell the truth**

Our work places us in a position of trust. RBC clients, shareholders, communities and our colleagues rely on us to be honest and do business responsibly. We do what we say we will do and earn the trust and loyalty of our clients, shareholders and communities.

**Respect others and treat them fairly**

Showing respect for everyone we work with, treating them fairly and taking personal responsibility for high performance enable us to achieve RBC's strategic goals. By living our Values and following the Code, we show others we honour the trust they place in us — making RBC a great place to work and do business.

**Uphold the law**

RBC is subject to the laws of the countries where we do business. RBC's policies are designed to comply with its legal and regulatory obligations, including the intent and spirit of the laws that apply to it. By doing so, RBC maintains its reputation for acting with integrity. To this end, each of us must understand and comply with RBC's policies and practices that apply to the way we do our jobs. Keep in mind that

breaking the law could result in civil and criminal penalties and fines for RBC and the individual involved, as well as potential damage to both RBC's and the individual's reputation.

**Comply with policies and instructions**
We are each responsible for knowing and following the RBC policies that apply to us. We must also comply with managers' instructions unless they are inconsistent with RBC Values or policies, against the law or result in health and safety risks. In these circumstances, or if we are unsure about the right thing to do, we should raise our concerns with one of the Key Contacts.

We must always be aware of both enterprise and local policies specific to business or geographic areas and work within the boundaries of what we have been authorized to do.

## 1.3 Our Shared Commitment and Accountability

The Code applies to all RBC employees, contract workers and members of the boards of directors.

The importance of the Code cannot be overemphasized. Understanding and complying with the Code is a condition of our work at RBC, and critical to earning the trust RBC clients have placed in us. This Code helps to protect our personal integrity and reputation as well as RBC's and the financial services industry's as a whole.

Any one of us who breaches, or fails to report an actual or suspected breach of the Code will be subject to corrective or disciplinary action. Corrective or disciplinary action is RBC's response to unacceptable behaviour, including breach of the Code, and can range from reprimands to termination of our working relationship with RBC.

We also expect RBC suppliers to follow similar principles and share our commitment to ethics and integrity as set out in our Supplier Code of Conduct. We will not knowingly use suppliers or other third parties who violate the law or operate unethically.

**Approval of the Code**
The RBC Board of Directors approves the Code.

**Waivers**
Waivers of the Code, or any of its provisions, are seldom considered. If a waiver is necessary to accommodate exceptional circumstances, it must be approved by RBC's Chief Human Resources Officer and RBC's Chief Compliance Officer. A waiver of the Code for Royal Bank of Canada directors or specified executive officers must be approved by Royal Bank of Canada's Board of Directors. Approved waivers must be disclosed publicly as required by law and RBC policies.

# 2. Speaking Up, Raising Concerns and Reporting Misconduct

**Our shared commitment and accountability involve more than just personally complying with the Code and acting with integrity.** At RBC, we have a responsibility to seek guidance and raise concerns about compliance with the Code, and a duty to report misconduct. If we need guidance, have questions or are unsure about the right thing to do, we should speak with our manager, senior management or one of the Key Contacts.

**When deciding whether to speak up and raise concerns, we should ask ourselves these questions:**

- Is this legal?
- Is this fair and ethical?
- How would RBC clients, our colleagues or third parties view this situation?
- Would RBC's reputation be damaged if this situation became public knowledge?

## 2.1 Speaking Up and Raising Concerns

We ensure that all questions and concerns raised are addressed. While the Code and RBC policies outline the ethical behaviour expected of us, they cannot anticipate every situation we encounter. By speaking up and raising our concerns, we ensure RBC does the right thing and we protect our clients' interests and assets, and RBC's reputation.

## 2.2 Reporting Misconduct

We have a duty to report actual or suspected misconduct. This includes violations of the Code, policies and the law. We must promptly notify our manager, senior management or any of the Key Contacts if we:

- are asked to commit or believe we have witnessed a potentially illegal or unethical act, or
- become aware of a breach of the Code or any other situation that could put RBC at risk of loss or harm.

All reports are investigated promptly and thoroughly, as appropriate. RBC keeps these reports confidential, and a report of misconduct or information is disclosed only to the extent necessary to investigate and address the situation.

**Some examples of misconduct are:**

- deliberate failure to comply with policies, management instructions or the law
- disrespectful behaviour, harassment, and actual or threatened violence
- misappropriation (including theft and kiting), improper use of company or client assets or systems, and improper sales reporting
- inappropriate client referrals, failure to report unusual client transactions and inappropriate use or disclosure of client information

¡ inappropriate social media use

## 2.3 Investigations, Inquiries and Reviews

Each of us has a duty to cooperate with internal or external investigations, inquiries, or reviews of concerns or alleged misconduct in a forthright manner. In these situations, we must provide honest, accurate, complete and timely information.

## 2.4 RBC's Commitment to Non-Retaliation

There will be no retaliation for speaking up and making a truthful report of actual or suspected misconduct, for participating in an investigation, or for exercising our legal rights. Retaliatory acts can include adverse compensation or workplace consequences such as negative performance evaluations, creating a hostile work environment, harassment, demotion, dismissal or giving someone tasks intended to alienate or discourage him or her. If you believe you've encountered any form of retaliation, follow the reporting procedures set out in the Respectful Workplace Policy to ensure the situation is addressed promptly.

**Commitment to non-retaliation means RBC will:**

¡ investigate every claim of retaliation, and
¡ take disciplinary action against individuals found to have retaliated in breach of the Code.

## 2.5 What We Expect of Our People Managers

While we are all held to the high ethical standards set out in our Values and the Code, those of us who are people managers are expected to:

- promote awareness and understanding of RBC Values and the Code
- lead by example to make sure our team members know and understand the Code, other policies and relevant laws
- maintain an environment where everyone feels comfortable asking questions, raising concerns and making reports, while respecting the privacy of those who do, and
- promptly escalate concerns and reports of misconduct as appropriate, and follow up to ensure they are addressed.

***Our integrity underpins everything we do.*** **It is the foundation for the way we deal with our clients and communities, work with our partners for a stronger RBC, conduct our many businesses and safeguard our assets. The Code explains how we maintain our culture of doing what's right that makes RBC a great place to do business and to work.**

# 3. Integrity in Dealing with RBC Clients, Communities and Others

**We are committed to promoting fairness in our dealings with our clients, shareholders, suppliers and others, carefully weighing our responsibilities to all stakeholders.**

We are in a relationship business and we pride ourselves on the quality of the service and products we provide RBC clients. Integrity and trust help us better serve RBC clients. The same applies to the communities where we live and work, making us a company that people want to do business with and work for.

## 3.1 Protecting RBC Client Information

Clients care deeply about the privacy of the information they share with us. Protecting their information and keeping their trust is integral to the financial services industry. It's also central to our culture of doing what's right. We each have a duty to keep RBC client information confidential and secure from the risk of theft, loss, improper disclosure or misuse. We do this by complying with RBC's Privacy Risk Management Policy. We are responsible for keeping RBC client information private, even after we leave RBC's service.

When collecting, using and safeguarding client information, we must treat it as we would RBC's own information. We must never share non-public information — accidentally or intentionally — with a third party or colleague who does not have a business need to know.

In the event of improper disclosure or a privacy breach, we must also follow established procedures. We must immediately report a potential or actual privacy breach to our local Privacy Officer, and we must never share any details about the breach with others who do not have a business need to know.

## 3.2 Protecting RBC Business Information

RBC's business information is one of our most important assets, so we have a duty to safeguard it by complying with RBC information security policies.

For more information, please refer to RBC's Privacy Risk Management Policy and Proprietary information in section 6.2 of this Code.

**What can I do to protect RBC business or client information?**

- ¡ Operate on a “need to know”, rather than “nice to know” basis, and share RBC business or client information only with those who need it for an appropriate business purpose — and always use proper procedures to share information securely.
- ¡ When working in public places (for example, while commuting, in restaurants or in hotels) take care not to be overheard or allow RBC business or client information to be visible or left behind.
- ¡ Dispose of confidential information as required by RBC’s Privacy Risk Management Policy.
- ¡ Immediately report any potential or actual privacy or information security incidents or breaches.

## 3.3 Protecting RBC’s Reputation in Our Communities – Media and Social Media

**Individual character and personal activities**
We must avoid any conduct or association which could bring our honesty, integrity or trustworthiness into question. RBC’s reputation and security depend on our actions. Remember, even our personal activities outside of work can impact RBC’s reputation. To maintain RBC’s reputation for integrity, we must conduct ourselves professionally and comply with our Values, the Code and relevant RBC policies.

**External representation**

Our Values and the Code provide a foundation for our behaviour when we represent RBC at work and in our communities. Our integrity and trust must be beyond reproach.

- **Use of external social media**
  One of the ways RBC communicates is through social media. As with other communications, it is important that our business and corporate social media use is appropriate and consistent with RBC’s general communication strategy. To ensure this, only specifically approved employees may participate in external social media for RBC business or corporate use. This is set out in our Enterprise-Wide Policy on the Usage of External Social Media and in other business-specific social media policies.

  When we participate personally in external or internal social media, we should do so responsibly as we could be considered to represent RBC both at and outside of work. We need to consider the potential impact our comments may have on RBC’s reputation, and be guided by our Values and the standards set out in the Code. Social media is not an appropriate venue to express concerns about RBC, our stakeholders or our competition. RBC provides multiple avenues for us to voice our concerns and have them addressed. Refer to RBC’s Enterprise Guidelines for Personal Use of Social Media for more guidance.

**When using social media (for example, Facebook, LinkedIn, Twitter, YouTube, QZone and Google), remember that our words are public and permanent. We should consider the following when using social media:**

- Safeguard our personal and professional reputations.
- When we identify ourselves as working for RBC or provide our RBC email address when using social media personally, our actions can reflect on our own and RBC's reputation.
- Confidential, non-public information relating to RBC, RBC clients, employees, contract workers, or other persons must never be a part of our social media conversations (for example RBC's financial information, client and employee personal information, business plans, pending product launches, partnerships with third parties and employment relationships).
- We must not represent RBC's position on an issue without approval from Corporate Communications and our manager.
- If we see an issue involving RBC unfolding in social media, we should contact Corporate Communications. We should not try to address the issue ourselves.

**Responding to inquiries from the media**

We manage and protect RBC's reputation and ensure consistency in managing media inquiries. Only those of us who have been authorized to do so may communicate with the media on RBC's behalf. Media inquiries must be referred to our Corporate Communications representatives; we are not authorized to address media questions ourselves. For more information, refer to RBC's Corporate Media Relations Policy.

**Supporting our communities**

We support the communities where we live, work and do business. We also accept accountability for the social and economic effects of our business decisions. We take pride in the value of our contributions and encourage employee volunteerism.

We must obtain our manager's permission to solicit for or promote other causes or issues, including charitable ones, in RBC workplaces. Personal contributions to political and charitable causes must be at our own expense and must not interfere with our work at RBC.

**Environmental sustainability**

RBC promotes environmental sustainability. This means minimizing our environmental footprint and offering environmentally responsible products and services. We believe fulfilling our goals in these areas will lead to short- and long-term benefits for RBC shareholders, clients, colleagues and the communities where we live and do business.

**Political involvement and contributions**

We support participation in general political processes.

We must not use RBC time or resources to promote political candidates either inside or outside the workplace. If we choose to participate in political activity, we do so on our own behalf and not as representatives of RBC. We must never use our affiliation with RBC to market our political activities.

## 3.4 Responding to External Inquiries

From time to time, we may receive an inquiry from government authorities or regulators regarding RBC business. When approached for information, we follow the procedures established for our business unit. This includes escalating the inquiry to our manager or local Compliance group, as appropriate.

# 4. Integrity in Working Together at RBC

**At RBC, we have a strong and capable global team serving our clients, working together to deliver on our strategy, and creating value and growth for our clients, communities and shareholders. We believe in each other and have confidence and trust in the capabilities and intentions of our colleagues. Our integrity, inclusiveness and teamwork help make RBC a great place to work, belong and thrive.**

## 4.1 Respectful Workplace

We all have a right to work in a respectful and professional environment. Treating each other with respect and dignity ensures a healthy and productive work environment. We respect our colleagues, RBC clients and others we deal with.

Harassment, including sexual harassment, discrimination, violence, retaliation and other disrespectful and inappropriate behaviour are not tolerated at RBC. Harassment is any kind of unwelcome behaviour that creates an offensive, hostile or intimidating work environment. Harassment interferes with a climate of mutual respect for the dignity and worth of each person. It also undermines the integrity of our relationship with RBC and one another.

**Sexual harassment is a specific form of harassment that includes unwelcome behaviour such as:**

- Sexual advances or flirtations
- Propositions or invitations for sexual favours
- Unwelcome “suggestive” jokes or stories
- Conversations about sexual exploits or desires
- Displaying or circulating sexually suggestive pictures, objects or representations of any action or subject that is sexual in nature

Sexual harassment also occurs where submitting to such behaviour or rejecting such behaviour is the basis for employment decisions.

Refer to RBC’s Respectful Workplace Policy for details and procedures for reporting breaches.

**Examples of disrespectful and inappropriate behaviour include:**

- lewd, profane, abusive or demeaning language (including email communication)
- yelling at another person
- threatening, bullying or intimidation
- fighting
- rough, boisterous or disruptive behaviour, and
- jokes that demean or belittle others, even when no offence is intended – such as racist, sexist and sexual orientation jokes.

## 4.2 Equal Opportunity, Fair Workplace and Human Rights

**Equal opportunity**
RBC promotes equal opportunity in all dealings with RBC employees, contract workers, clients and others we deal with. In addition, RBC provides equal opportunity for advancement and growth in the workplace by filling open positions based on business need and candidate merit.

**Fair workplace**
We treat all employees and contract workers fairly, pay fair compensation and provide respectful work environments. All employees are encouraged to raise concerns directly within RBC using any of the Key Contacts.

**Human rights**
We comply with all laws regarding non-discrimination and human rights in the jurisdictions where we operate. These laws often prohibit discrimination on certain grounds, such as race, colour, religion, age, gender, marital status, sexual orientation and disability.

Even where laws allow for discrimination on these grounds, RBC operates in a way that doesn't differentiate unfairly.

## 4.3 Personal Information About Us

Those of us who work at RBC have a right to privacy. Personal information about each of us is confidential. Collection, use and disclosure of this information must be relevant to our working relationship with RBC.

Additionally, when someone confides in us and asks us to keep the information confidential, we must do so, except as required by law or the Code. Keeping information private and confidential is a matter of personal integrity, honouring the trust others place in us. For more information, please refer to RBC's Employee Privacy View.

**Personal information about us is used by RBC where needed to manage our working relationships, and must kept confidential as outlined in RBC's Employee Privacy View. It includes:**

- information required to verify credentials and education
- employment-related credit checks
- home address
- home phone number and personal cell phone number
- government-issued identification numbers
- compensation
- performance reviews
- corrective/disciplinary actions, and
- health and benefit information and insurance records, including date of birth and non-HIPAA (Health Insurance Portability and Accountability Act) information in the U.S.

## 4.4 Workplace Health and Safety

RBC is committed to providing a healthy and safe workplace and complying with health and safety laws. Maintaining such a workplace is a shared responsibility of RBC and its managers, employees and contract workers. All employees and contract workers are to take every reasonable and necessary precaution to ensure their health and safety as well as those of their colleagues.

To ensure our workplaces are healthy and safe, we understand and follow RBC's health and safety policies. We also:

- do not have weapons of any kind in our possession while on RBC premises, and
- obtain management approval and ensure any required permits have been obtained before serving alcohol on RBC premises.

# 5. Integrity in How We Do Business

**Ethical behaviour governs every aspect of our business, from day-to-day transactions to special projects.**

## 5.1 Business Dealings

As representatives of RBC, we have a duty to never mislead others — even by omission — about RBC products or services. We must be mindful when evaluating RBC communications that all information is clear and not misleading in any way. This is especially important with regard to our sales representation, marketing and advertising.

To this end, we promptly correct misstatements when we notice them, or when they are brought to our attention. We must make every reasonable effort to provide full and fair information and avoid errors or ambiguity in any statement issued on RBC's behalf. This means we must be knowledgeable about the products and services we promote to ensure our communications about them are accurate.

## 5.2 Avoiding and Managing Conflicts of Interest

By acting without bias, we can assure RBC stakeholders of our integrity. This means that the decisions we make in our work with RBC must be independent of our personal interests. Obligations arising from our other business, family and social relationships must not play a role in our work for RBC. A conflict of interest — actual, potential or perceived — is a situation that could cause others to doubt our ability to perform our jobs effectively and objectively, without bias. Keep in mind that a conflict of interest can exist even where we have not behaved improperly or unethically. Even the impression of a conflict of interest can affect RBC's reputation and our own.

We cannot prevent or avoid the presence of conflicts of interest, as they arise naturally out of our various relationships with RBC, its clients and others. We can avoid some conflicts of interest, and manage others so that we remain objective in our work at RBC.

We have an ongoing responsibility to identify conflicts of interest in relation to RBC, its clients and its suppliers. This includes potential and perceived conflicts as well as actual ones. We must immediately disclose all conflicts we identify so they can be avoided or managed appropriately.

**How can I recognize and manage potential conflicts of interest?**

- Think about how your actions would look to others.
- Disclose activities upfront, especially if you are unsure about potential conflict.
- Talk to your manager or local Compliance group if you have any questions.

Some common conflicts of interest are described in the following sections. Note that in these sections *"family"* includes:

- a spouse, common law partner or domestic partner
- children and step-children
- parents and siblings
- grandparents and grandchildren, and
- other relatives by blood or marriage.

For more information, refer to RBC's Conflicts of Interest Policy and related control standards as well as RBC's Enterprise Anti-Bribery Anti-Corruption Policy. These resources also explain how to disclose actual, potential or perceived conflicts.

**Managing our dealings with RBC**
We often use RBC products and services ourselves, as do many of our friends and family members. We must make sure all our personal, family and friends' dealings with RBC are handled at arm's length — independent of their relationship to us and our relationship with RBC - by following relevant procedures for the business we work in. For more information, we should check with our local Compliance group**.**

**Managing working relationships with family and friends**
It is possible for our personal relationships to have an effect on our work at RBC. We must understand the actual or perceived effects that personal relationships can have in order to avoid situations that would reflect negatively on RBC.

**What types of relationships could cause a conflict of interest?**

¡ A direct supervisory relationship with a family member or close friend
¡ A working relationship where we may have the ability to favourably impact compensation, work conditions or promotion prospects of a close friend or family member
¡ An outside activity, external directorship or work arrangement that interferes or competes with RBC's business

Remember, there is no substitute for good judgment and common sense. If we are ever in doubt about a relationship that may put us in a conflict of interest, we should speak with our manager.

Likewise, our loyalties can become conflicted if friends or family members work for a company that does or seeks to do business with RBC as an RBC client or supplier. This is especially likely to be a problem if it happens to those of us who are involved in the approval or selection process, contract negotiations or relationship management with RBC clients or suppliers. In these cases, we must inform our manager or local Compliance group of the potential conflict of interest so it can be addressed.

**Managing outside activities or work**
Some of us take on additional work or activities outside our work at RBC. This may take the form of part-time work elsewhere, volunteer activity or a personal business run from home. No matter the type of work, these additional activities must not be with one of RBC's competitors. They also must not interfere with our responsibilities to RBC or its clients.

We must be aware of actual, potential or perceived conflicts of interest related to outside activities and must disclose and obtain approval for them as required. Doing so allows us to maintain our commitment to integrity while maximizing our business and relationships.

For more information, refer to the Control Standards for Outside Activities.

**Managing external directorships**
RBC encourages us to participate in our communities. For example, some of us may choose to take on directorships or similar roles at companies, organizations, clubs, associations or foundations. If we do, the role must not compromise our ability to do our best work for RBC and its clients. We must be careful to avoid actual, potential or perceived conflicts of interest and potential reputational issues. Roles and relationships must be assessed to ensure we comply with the Code and RBC policies on disclosure and approval. Generally, it is not acceptable to act as an officer or director of a client's business.

For publicly traded, private for-profit, not-for-profit, or venture capital entities/organizations, refer to RBC's Conflicts of Interest Policy and the Control Standards for External Directorships for the required process and approvals.

**Accepting appointments or inheritances**
RBC's clients look to us for advice on their financial matters. Clients may ask or appoint us to represent them or their interests in a variety of situations. These appointments include our acting as attorneys, mandataires, trustees, executors, administrators, liquidators, protectors, and in other appointments or fiduciary roles. In some instances, clients wish to show their appreciation for the value of our services by giving us a gift effective on their death. These can be made in the client's will, by designation as beneficiary under a client's policy, plan or account, or by joint ownership of an asset. To make sure there is no appearance of conflict, we and our families must not accept these requests, appointments, gifts or benefits unless they arise independently of the client relationship. We must ensure we follow established procedures before accepting any appointment or benefit, obtaining management and local Compliance approvals appropriate for the business we work in. When acceptance of certain appointments is part of our role (such as being a discretionary investment manager), we must follow RBC policies.

**Managing gifts and entertainment**
In business, it is common to foster relationships by exchanging courtesies such as meals, gifts and entertainment. However, we must ensure that the gifts and entertainment we accept are not intended or designed to influence our business judgment on behalf of RBC. Likewise, we must never give gifts or entertainment intended to inappropriately influence someone else's business judgment. To keep our purposes clear, all gifts and entertainment we accept or give must comply with RBC policies. We must take extra caution when the intended recipient of a gift or entertainment is a public official.

In all cases, we must comply with RBC's Conflicts of Interest Policy, the Control Standards for Gifts and Entertainment and RBC's Enterprise Anti-Bribery Anti-Corruption Policy. Your business unit may also have more specific rules; for further information you should contact your local Compliance group.

**Gifts** are anything of value given or received in relation to RBC business. We may only give or accept gifts that are customary, modest, and culturally sensitive. We must never accept or give cash, bonds or negotiable securities, although gift certificates or gift cards are allowed as long as they cannot be converted into cash.

**Key things to remember when considering gifts or entertainment:**

- Cash, bonds and negotiable securities are never acceptable gifts regardless of the amount.
- RBC's Control Standards for Gifts and Entertainment have a $100 Canadian limit on gifts.
- Paying for a client's travel or lodging expenses is not permitted; similarly, receiving travel or lodging expenses is also not permitted.
- Entertainment must not seem excessive or inappropriate; if unsure, seek guidance from your manager or Compliance before accepting an invitation.
- Seek guidance from Compliance before providing a gift or entertainment to a public official.
- Gifts and entertainment must not create a sense of obligation for either party – it's never wrong to question the motive behind business gifts and entertainment.
- Whether your business unit has specific rules regarding gifts or entertainment.

**Entertainment** includes any event we host or attend for business related purposes. Common examples include meals, sporting events, theatrical performances and educational events. Entertainment should always be in good taste and consistent with usual business practice. As with gifts, we must avoid entertainment that is too lavish or expensive because it may also be seen to influence our judgment.

If only one party attends the event, then it is considered a gift. For example, if a supplier gives us tickets to an event, but does not attend, then we must follow the control standard for gifts.

RBC also has control standards around payment for travel or lodging expenses. These apply to situations where RBC is providing entertainment or where we are accepting travel or lodging expenses from a third party.

# 5.3 Preventing Financial Crime

**Anti-money laundering ("AML") and anti-terrorist financing**
Money laundering and terrorist financing are serious issues in many parts of the world. Global efforts to prevent these crimes receive significant attention from regulators, governments, international organizations and law enforcement agencies.

It is important that we know and comply with all laws designed to detect and deter money laundering and terrorist financing activities. To do this, we must be vigilant and exercise good judgment when dealing with unusual or suspicious transactions or activities.

For more information, please refer to RBC's Anti-Money Laundering and Anti-Terrorist Financing Policy.

**What can I do to identify and prevent money laundering?**

- Know your clients (“KYC”), verify their identity and that of any beneficial owners, and obtain evidence of their source of wealth and source of funds.
- Identify and escalate as soon as possible any unusual activity you believe may potentially be related to money laundering or terrorist financing activity.
- Never advise (‘tip off’) anyone suspected of possible money laundering or terrorist financing activity of your concerns or notify them of any potential reporting.
- Never alter, remove or disguise information to facilitate a transaction that would otherwise be prohibited under the law.

**Anti-bribery and anti-corruption**
Government and other groups globally are working to fight corruption because of its damaging effects on countries, communities and businesses. We support these efforts through our commitment to operate with integrity. We are committed to doing business based on the quality of RBC’s reputation and the services we provide, and not because we have gained any dishonest or unfair advantage. We continue to enhance our Anti-Bribery Anti-Corruption Policy and other controls to be sure that we abide by the anti-corruption laws in place wherever we do business.

**What can I do to identify and prevent bribery and corruption?**

- We must not solicit, give, receive or promise any “item of value”, either directly or indirectly, with the intent of helping RBC obtain an advantage. This includes offering, providing or receiving excessive gifts and entertainment.
- We must not make facilitation payments. Facilitation payments are typically small payments or fees made to government officials to obtain or speed up routine actions or services such as obtaining licences or permits. If in doubt, always check with Compliance before considering a payment.

For more information, please refer to RBC’s Enterprise Anti-Bribery Anti-Corruption Policy and RBC’s Control Standards for Gifts and Entertainment.

## 5.4 Securities Trading

Many of the countries where we do business have laws regarding when we can trade in securities issued by any company.

Before trading in the securities of RBC, its clients or any other company, we must familiarize ourselves with RBC’s policies on personal trading, as well as the effect that the perception of wrongdoing may have.

From time to time, we may have access to material, non-public (or “inside”) information about a company, including RBC or its clients. As a rule, inside information can reasonably be expected to affect the market value or price of a company’s securities. Similarly, a reasonable investor would consider it important when deciding whether to buy, sell or hold onto a security. When we have inside information about a company, we must not trade in the securities of that company. Doing so is called “insider trading” – which is illegal and subject to fines and penalties. It is also illegal to provide inside information

to another (this is usually called “tipping”) unless it is necessary to accomplish a legitimate business purpose.

For more information, refer to RBC’s Inside Information and Information Barriers Policy and the Personal Trading Policy.

- Directors of Royal Bank of Canada should refer to the *Insider Trading and Reporting Policy and Procedures for Directors of Royal Bank of Canada.*
- Non-executive directors of subsidiaries of Royal Bank of Canada who are not otherwise officers, employees, or directors of Royal Bank of Canada, should refer to the Policy on Inside Information and Personal Trading for Non-Executive Directors of Subsidiaries of Royal Bank of Canada.

## 5.5 Fair Competition

RBC seeks to ensure fair business practices are followed wherever we do business. Many countries where we do business have laws to promote fair competition and reduce monopolistic (or anti-competitive) activity.

At RBC, each of us has a responsibility to know and comply with applicable competition and anti-trust laws. We need to be able to recognize and avoid situations that may conflict with these laws. To ensure we comply with these laws, we must be especially careful when dealing with competitors of RBC. Never agree or arrange with a competitor to do any of the following:

- fix, maintain, increase or try to control the price of a product or service
- divide or allocate sales, clients or markets for the supply of products or services, or
- fix, maintain, increase, lessen, or otherwise try to control the supply of a product or service.

We take great care at industry association meetings or other events where we may interact with competitors. If a competitor mentions any of these practices, we should voice our disagreement and withdraw from the discussion. While industry associations can provide excellent opportunities for networking and business development, they pose challenges as well. When attending events, we must be careful to avoid even the appearance that RBC participates in or endorses unfair or manipulative business conduct.

**Other examples of activities where competition issues arise:**

- bid-rigging, or secretly making agreements with other bidders when submitting bids or tenders
- making availability of a product or service conditional on the purchase of another product or service
- communications that could be interpreted to show an anti-competitive intent or behaviour, such as advertisements that are misleading, unfair or inaccurate when they compare RBC products with those of our competitors, or
- any other act that is likely to harm competition substantially if done in circumstances where we are dominant in a market or a class of business.

For more information, please refer to RBC's Enterprise Anti-Trust and Competition Law Policy.

## 5.6 International Trade Controls

**Exports**
Because we deliver RBC products and services internationally, we are subject to global trade laws, including exports and re-exports from the U.S. and other countries. Always be sure that we have any necessary export licenses or permits.

Violations of trade control laws can have severe consequences for both RBC and the individuals involved. Therefore, we must be aware of relevant requirements and contact the Law Group or Compliance with any questions.

**Sanctions**
RBC complies with national and multinational sanctions and regulations that apply to our businesses. We must all be aware of any sanctions that impact the work we do and follow RBC procedures. Contact the Law Group or AML Compliance for advice if you are unsure of the right course of action.

For more information, please refer to RBC's Global Economic Sanctions Policy.

# 6. Integrity in Safeguarding Entrusted Assets

**As a financial institution, we manage the assets in our care responsibly and ethically to earn and maintain our stakeholders' trust.**

## 6.1 Protecting RBC Client Property

In order to earn RBC clients' trust, we must safeguard their property. This property should be used only in accordance with their directions, relevant RBC policy and the law. Using this property inappropriately or for personal gain is a violation of this trust.

## 6.2 Protecting RBC Property

**Fraud, misappropriation and other types of misconduct**

Many of us have access to premises, systems and information about RBC processes that are not available to RBC clients or the general public. We must never use this access or information to benefit ourselves, our families or our friends, or for any purpose unrelated to the performance of our duties. Fraud, misappropriation of property or corporate opportunities and other types of misuse are never tolerated.

Acts of fraud may include intentionally concealing or misrepresenting facts for the purpose of inducing, deceiving or misleading others.

**Some examples of fraud are:**

- improper financial reporting (such as improper revenue recognition and over- or understating assets or liabilities)
- deliberate failure to fulfill our disclosure obligations, and
- falsifying records.

"Misappropriation" includes theft or other intentional misuse of RBC assets, systems, processes or RBC client funds. Misuse can include any purpose not related to the performance of our duties.

**Some examples of misappropriation and misuse are:**

- intentional personal use of RBC expense accounts or corporate credit cards — expense accounts and corporate credit cards must be used only for expenses eligible for reimbursement under RBC's expense guidelines
- unauthorized "borrowing" and "kiting" (taking advantage of the time delay required for an item to clear)
- obtaining funds through false pretences such as depositing a cheque known to be NSF (Non- Sufficient Funds) or making an "empty envelope deposit" in an automated banking machine, and
- personally taking advantage of opportunities identified through the use of corporate property, information or position.

**Proprietary information**
RBC proprietary information includes non-public or undisclosed information we withhold from general knowledge. This information is critical to our business, and could be useful to our competitors or harmful to RBC if disclosed.

**Some examples of proprietary information include:**

- RBC client lists and trade secrets
- technical and statistical information
- financial documents
- contract documentation
- legal or business matters
- business processes, and
- corporate strategies and plans.

RBC's proprietary information may be disclosed to outside parties only if required by law or if properly authorized. Even then, we disclose the information only once the appropriate confidentiality agreement has been signed. Our responsibility to safeguard RBC's proprietary information continues, even after we leave RBC's service. Proprietary information is to be protected in keeping with RBC's Privacy Risk Management Policy.

**Trademarks, copyright and other intellectual property**
RBC intellectual property has important commercial value and is crucial to RBC's effective competition in the marketplace. It includes any of the following that we create while working for RBC:

- inventions, improvements, works of authorship, developments, concepts or ideas
- data, processes, online websites or applications, computer software programs, or discoveries, and
- trade secrets, trademarks, brand names, copyrights or logos.

Any intellectual property we generate in our RBC work belongs to RBC and remains with RBC after we leave RBC's service. We should use RBC intellectual property only as permitted in this Code and RBC policies.

RBC intellectual property must not be used by a third party without our prior approval. Similarly, we may use a third party's intellectual property only with the third party's prior approval. For example, all original musical, artistic and literary works, computer software, performances and sound recordings are protected by copyright laws. We must not download, install or copy software to our RBC-issued computers without first obtaining the owner's permission.

We should seek guidance from the Law Group if we suspect RBC intellectual property has been infringed upon or otherwise misused, or if we have any questions on the use of intellectual property.

**Proper use of RBC networks, systems software, devices and the Internet**
Most of the equipment, systems and technologies that we use in our work belong to RBC. This includes RBC computer networks, software, computers and portable devices, as well as the messages communicated with them. Where RBC policies permit us to use our personal equipment for RBC work, we must follow the policies associated with that use.

When sending communications through RBC networks, we must always maintain a professional tone and comply with the Code and RBC policies including the Respectful Workplace Policy. We follow these requirements whether we are using RBC equipment or our own.

RBC reserves the right to monitor, audit and inspect our use of RBC systems and technology, including internet usage and email. While we may engage in limited personal use of RBC equipment, systems and technology, we must remember to comply with the Code and RBC policies, including the Respectful Workplace Policy. In line with this policy, we must not use these systems to view or communicate inappropriate material. These systems also must not be used to do work on behalf of another business or organization, unless authorized by RBC.

**Some examples of inappropriate material include:**

- sexually explicit material
- gambling websites
- derogatory jokes, or
- statements or images about any demographic group such as racial, religious, disability status, or sex/gender.

## 6.3 Keeping Accurate Books and Records

RBC's credibility depends on the integrity of its books, records and accounting. Clients rely on us to maintain and provide accurate records of their dealings with us — a duty RBC takes seriously. We must ensure RBC's books and records are accurate, timely and complete, and reflect RBC business, operations, earnings and financial status.

To maintain accurate books and records, we follow internal processes and procedures. This includes capturing information in the proper system and labelling it correctly so it is complete and accurate.

We are expected to act honestly and with integrity in handling RBC accounts at all times. For instance, overstating an amount on an expense report or falsifying a sales record in order to exceed a target would be serious violations of RBC's trust in us and the Code. False statements such as these are never tolerated, no matter how small the amount or the reason behind the action.

We all provide information that RBC uses to prepare financial statements, regulatory reports and publicly-filed documents. This means we all play a role in ensuring that the information we record complies with all applicable accepted accounting principles and RBC internal controls.

Keep in mind that falsifying financial or business records (including client documentation) or making false statements to our auditors is against the law. Likewise, it is unethical, unlawful and prohibited to make a payment or establish an account on RBC's behalf for any purpose other than as described in supporting documentation.

# 7. Conclusion

Our Code of Conduct is integral to the way we do business at RBC. It helps define our culture of doing what's right and provides all of us with the same frame of reference for dealing with issues that can be both sensitive and complex.

**"We are all responsible for protecting and enhancing RBC's reputation by following our Code of Conduct. It's also important that we support one another in doing what's right, including feeling empowered to challenge situations we believe are wrong."** ***Dave McKay, President and CEO, RBC***

**Exhibit 5**

Industry Guide 3 — Return on Equity and Assets Ratios

| | For the Year-Ended October 2015 | For the Year-Ended October 2014 | For the Year-Ended October 2013 |
|---|---|---|---|
| Return on Assets | 0.95% | 0.99% | 0.98% |
| Return on Equity | 18.6% | 19.0% | 19.7% |
| Dividend Payout Ratio | 46% | 47% | 46% |
| Equity to Asset Ratio | 5.57% | 5.74% | 5.50% |

Results are from Consolidated Financial Statements.

**Exhibit 7**

## CONSOLIDATED RATIOS OF EARNINGS TO FIXED CHARGES

The tables below set forth our consolidated ratios of earnings to fixed charges for the five-year period ended October 31, 2015:

| | Year ended October 31, 2015 | Year ended October 31, 2014 | Year ended October 31, 2013 | Year ended October 31, 2012 | Year ended October 31, 2011 |
|---|---|---|---|---|---|
| Excluding Interest on Deposits | 6.14 | 6.23 | 5.34 | 4.88 | 3.47 |
| Including Interest on Deposits | 2.53 | 2.43 | 2.28 | 2.12 | 1.84 |

For purposes of computing these ratios, earnings represent net income plus income taxes and fixed charges (excluding capitalized interest). Fixed charges represent (i) estimated interest within rental expense, (ii) amortization of debt issuance costs, and (iii) interest (including capitalized interest), including or excluding deposit interest as indicated.

**Royal Bank of Canada and Subsidiaries**
**Ratio of Earnings to Fixed Charges and Preferred Dividends**

| *(Canadian dollars in millions)* | Year Ended October 31 2015 | Year Ended October 31 2014 | Year Ended October 31 2013 | Year Ended October 31 2012 | Year Ended October 31 2011 | |
|---|---|---|---|---|---|---|
| **Excluding Interest on Deposits** | | | | | | |
| Net Income before income taxes | $ 12,623 | $ 11,710 | $ 10,447 | $ 9,513 | $ 8,191 | |
| Less: Income/(loss) from equity investees (Note 1) | (146) | (162) | (139) | 6 | 9 | ***Note 1*** |
| Fixed Charges: | | | | | | |
| Interest expense (excl. Deposits) | $ 2,235 | $ 2,030 | $ 2,205 | $ 2,298 | $ 3,164 | |
| Estimated interest within rental expense | 193 | 177 | 169 | 155 | 156 | |
| Total fixed charges | 2,428 | 2,207 | 2,374 | 2,453 | 3,320 | |
| Preferred dividend requirements (note 2) | 240 | 277 | 317 | 328 | 326 | ***Note 2*** |
| Fixed charges and preferred dividends | 2,668 | 2,484 | 2,691 | 2,781 | 3,645 | |
| Earnings | 14,905 | 13,755 | 12,682 | 11,972 | 11,520 | |
| **Ratio of earnings to fixed charges** | **6.14** | **6.23** | **5.34** | **4.88** | **3.47** | |
| **Ratio of earnings to fixed charges and preferred dividends** | **5.59** | **5.54** | **4.71** | **4.31** | **3.16** | |
| **Including Interest on Deposits** | | | | | | |
| Net Income before income taxes | $ 12,623 | $ 11,710 | $ 10,447 | $ 9,513 | $ 8,191 | |
| Less: Income/(loss) from equity investees (Note 1) | (146) | (162) | (139) | 6 | 9 | ***Note 1*** |
| Fixed Charges: | | | | | | |
| Interest expense (incl. Deposits) | $ 7,958 | $ 7,903 | $ 7,899 | $ 8,379 | $ 9,626 | |
| Estimated interest within rental expense | 193 | 177 | 169 | 155 | 156 | |
| Total fixed charges | 8,151 | 8,080 | 8,068 | 8,534 | 9,782 | |
| Preferred dividend requirements (note 2) | 240 | 277 | 317 | 328 | 328 | ***Note 2*** |
| Fixed charges and preferred dividends | 8,391 | 8,357 | 8,385 | 8,862 | 10,110 | |
| Earnings | 20,628 | 19,628 | 18,376 | 18,053 | 17,982 | |
| **Ratio of earnings to fixed charges** | **2.53** | **2.43** | **2.28** | **2.12** | **1.84** | |
| **Ratio of earnings to fixed charges and preferred dividends** | **2.46** | **2.35** | **2.19** | **2.04** | **1.78** | |

| ***Note (1)*** | 2015 | 2014 | 2013 | 2012 | 2011 |
|---|---|---|---|---|---|
| **Equity in Undistributed Earnings of Unconsolidated Subsidiaries Calculation (C $'000s):** | | | | | |
| Associated Corporations | | | | | |
| (equity accounted investments) | 149 | 162 | 159 | 162 | (8,890) |
| Impairment of investments in JV and associates | (3) | - | (20) | (168) | |
| | 146 | 162 | 139 | (6) | (8,890) |
| Note: Losses are presented with a negative sign in this calculation. | | | | | |
| ***Note (2)*** | | | | | |
| **Preferred Dividend Requirements Calculation (C $ millions):** | | | | | |
| Preferred Dividends (per Income Statement) | 191 | 213 | 253 | 258 | 258 |
| Taxable Equivalent Gross-up (1-Effective Tax Rate for period) | 79.4% | 76.9% | 79.9% | 78.9% | 78.7% |
| Preferred Dividend Requirement | 240 | 277 | 317 | 327 | 328 |
| Effective Tax Rate | 20.6% | 23.1% | 20.1% | 21.1% | 21.3% |

**Exhibit 31.1**

**SOX 302 CERTIFICATION**

I, David I. McKay, certify that:

1. I have reviewed this annual report on Form 40-F of Royal Bank of Canada;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the issuer as of, and for, the periods presented in this report;
4. The issuer's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the issuer and have:
   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the issuer, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
   (c) Evaluated the effectiveness of the issuer's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   (d) Disclosed in this report any change in the issuer's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the issuer's internal control over financial reporting; and
5. The issuer's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the issuer's auditors and the audit committee of the issuer's board of directors (or persons performing the equivalent functions):
   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the issuer's ability to record, process, summarize and report financial information; and
   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the issuer's internal control over financial reporting.

December 2, 2015

/s/ David I. McKay
Name: David I. McKay
Title: President and Chief Executive Officer

**Exhibit 31.2**

**SOX 302 CERTIFICATION**

I, Janice R. Fukakusa, certify that:

1. I have reviewed this annual report on Form 40-F of Royal Bank of Canada;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the issuer as of, and for, the periods presented in this report;
4. The issuer's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the issuer and have:
   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the issuer, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
   (c) Evaluated the effectiveness of the issuer's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   (d) Disclosed in this report any change in the issuer's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the issuer's internal control over financial reporting; and
5. The issuer's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the issuer's auditors and the audit committee of the issuer's board of directors (or persons performing the equivalent functions):
   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the issuer's ability to record, process, summarize and report financial information; and
   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the issuer's internal control over financial reporting.

December 2, 2015

/s/ Janice R. Fukakusa

Name: Janice R. Fukakusa
Title: Chief Administrative Officer and Chief Financial Officer

**Exhibit 32.1**

CERTIFICATIONS

Pursuant to section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of section 1350, chapter 63 of title 18, United States Code), the undersigned officer of Royal Bank of Canada, a Canadian chartered Bank (the "Bank"), hereby certifies, to such officer's knowledge, that:

The annual report on Form 40-F for the year ended October 31, 2015 (the "Report") of the Bank fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934 and information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Bank.

Dated: December 2, 2015

/s/ David I. McKay

Name: David I. McKay
Title: President and Chief Executive Officer

**Exhibit 32.2**

CERTIFICATIONS

Pursuant to section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of section 1350, chapter 63 of title 18, United States Code), the undersigned officer of Royal Bank of Canada, a Canadian chartered Bank (the "Bank"), hereby certifies, to such officer's knowledge, that:

The annual report on Form 40-F for the year ended October 31, 2015 (the "Report") of the Bank fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934 and information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Bank.

Dated: December 2, 2015

/s/ Janice R. Fukakusa

Name: Janice R. Fukakusa
Title: Chief Administrative Officer and Chief Financial Officer