Consolidated financial statements

95 Financial reporting responsibility
96 Independent auditor's report – Canadian generally accepted auditing standards
99 Report of independent registered public accounting firm – Standards of the Public Company Accounting Oversight Board (United States)
102 Report of independent registered public accounting firm – Internal control over financial reporting
103 Consolidated balance sheet
104 Consolidated statement of income
105 Consolidated statement of comprehensive income
106 Consolidated statement of changes in equity
107 Consolidated statement of cash flows
108 Notes to the consolidated financial statements

Details of the notes to the consolidated financial statements

108 Note 1 – Basis of preparation and summary of significant accounting policies
123 Note 2 – Fair value measurement
131 Note 3 – Significant transactions
133 Note 4 – Securities
136 Note 5 – Loans
143 Note 6 – Structured entities and derecognition of financial assets
146 Note 7 – Land, buildings and equipment
147 Note 8 – Goodwill, software and other intangible assets
149 Note 9 – Other assets
149 Note 10 – Deposits
149 Note 11 – Other liabilities
150 Note 12 – Derivative instruments
154 Note 13 – Designated accounting hedges
159 Note 14 – Subordinated indebtedness
159 Note 15 – Common and preferred share capital
163 Note 16 – Capital Trust securities
164 Note 17 – Share-based payments
166 Note 18 – Post-employment benefits
172 Note 19 – Income taxes
174 Note 20 – Earnings per share
175 Note 21 – Commitments, guarantees and pledged assets
177 Note 22 – Contingent liabilities and provisions
180 Note 23 – Concentration of credit risk
181 Note 24 – Related-party transactions
182 Note 25 – Investments in equity-accounted associates and joint ventures
183 Note 26 – Significant subsidiaries
184 Note 27 – Financial instruments – disclosures
185 Note 28 – Offsetting financial assets and liabilities
186 Note 29 – Interest income and expense
187 Note 30 – Segmented and geographic information
190 Note 31 – Future accounting policy changes

Financial reporting responsibility

Management of Canadian Imperial Bank of Commerce (CIBC) is responsible for the preparation, presentation, accuracy and reliability of the Annual Report, which includes the consolidated financial statements and management's discussion and analysis (MD&A). The consolidated financial statements have been prepared in accordance with Section 308(4) of the *Bank Act* (Canada), which requires that the financial statements be prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board. The MD&A has been prepared in accordance with the requirements of applicable securities laws.

The consolidated financial statements and MD&A contain items that reflect the best estimates and judgments of the expected effects of current events and transactions with appropriate consideration to materiality. Financial information appearing throughout the Annual Report is consistent with the consolidated financial statements.

Management has developed and maintains effective systems, controls and procedures to ensure that information used internally and disclosed externally is reliable and timely. CIBC's system of internal controls and supporting procedures are designed to provide reasonable assurance that transactions are authorized, assets are safeguarded and proper records are maintained. These internal controls and supporting procedures include the communication of policies and guidelines, the establishment of an organizational structure that provides appropriate and well-defined responsibilities and accountability, and the careful selection and training of qualified staff. Management has assessed the effectiveness of CIBC's internal control over financial reporting as at year-end using the Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework). Based upon this assessment, we have determined that internal control over financial reporting is effective in all material respects and CIBC is in compliance with the requirements set by the U.S. Securities and Exchange Commission (SEC) under the U.S. Sarbanes-Oxley Act.

CIBC's Chief Executive Officer and Chief Financial Officer have certified CIBC's annual filings with the SEC under the U.S. Sarbanes-Oxley Act and with the Canadian Securities Administrators under Canadian securities laws.

The Internal Audit department reviews and reports on the effectiveness of CIBC's internal control, risk management and governance systems and processes, including accounting and financial controls, in accordance with the audit plan approved by the Audit Committee. Our Chief Auditor has unfettered access to the Audit Committee.

The Board of Directors oversees management's responsibilities for financial reporting through the Audit Committee, which is composed of independent directors. The Audit Committee reviews CIBC's interim and annual consolidated financial statements and MD&A and recommends them for approval by the Board of Directors. Other key responsibilities of the Audit Committee include monitoring CIBC's system of internal control, and reviewing the qualifications, independence and service quality of the shareholders' auditor and internal auditors.

Ernst & Young LLP, the shareholders' auditor, obtains an understanding of CIBC's internal controls and procedures for financial reporting to plan and conduct such tests and other audit procedures as they consider necessary in the circumstances to express their opinions in the reports that follow. Ernst & Young LLP has unrestricted access to the Audit Committee to discuss their audit and related matters.

The Office of the Superintendent of Financial Institutions (OSFI) Canada is mandated to protect the rights and interest of depositors and creditors of CIBC. Accordingly, OSFI examines and enquires into the business and affairs of CIBC, as deemed necessary, to ensure that the provisions of the *Bank Act* (Canada) are being complied with and that CIBC is in sound financial condition.

Victor G. Dodig
President and Chief Executive Officer

Hratch Panossian
Chief Financial Officer

December 4, 2019

Independent auditor's report

To the shareholders and directors of Canadian Imperial Bank of Commerce

Opinion

We have audited the consolidated financial statements of Canadian Imperial Bank of Commerce (CIBC), which comprise the consolidated balance sheets as at October 31, 2019 and 2018, and the consolidated statements of income, consolidated statements of comprehensive income, consolidated statements of changes in equity and the consolidated statements of cash flows for each of the years in the three-year period ended October 31, 2019, and notes to the consolidated financial statements, including a summary of significant accounting policies (collectively referred to as the "consolidated financial statements").

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of CIBC as at October 31, 2019 and 2018, and its consolidated financial performance and its consolidated cash flows for each of the years in the three-year period ended October 31, 2019 in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board.

Basis for opinion

We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the "Auditor's responsibilities for the audit of the consolidated financial statements" section of our report. We are independent of CIBC in accordance with the ethical requirements that are relevant to our audit of the consolidated financial statements in Canada, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key audit matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the year ended October 31, 2019. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. For each matter below, our description of how our audit addressed the matter is provided in that context.

We have fulfilled the responsibilities described in the "Auditor's responsibilities for the audit of the consolidated financial statements" section of our report, including in relation to these matters. Accordingly, our audit included the performance of procedures designed to respond to our assessment of the risks of material misstatement of the consolidated financial statements. The results of our audit procedures, including the procedures performed to address the matters below, provide the basis for our audit opinion on the accompanying consolidated financial statements.

Allowance for credit losses

Key audit matter

As more fully described in Note 1 and Note 5 to the consolidated financial statements, CIBC has used an expected credit loss (ECL) model to recognize $1,915 million in allowances for credit losses on its consolidated balance sheet. ECL allowances represent an unbiased and probability-weighted amount, which is determined by evaluating a range of possible outcomes and reasonable and supportable information about past events, current conditions and forecasts of future economic conditions. Forward-looking information (FLI), which involves significant judgment, is explicitly incorporated into the estimation of ECL allowances. ECL allowances are measured at amounts equal to either (i) 12-month ECL; or (ii) lifetime ECL for those financial instruments that have experienced a significant increase in credit risk (SICR) since initial recognition or when there is objective evidence of impairment.

Auditing the allowance for credit losses was complex and required the involvement of specialists due to the inherent complexity of the models, assumptions, judgments and the interrelationship of these variables in measuring the ECL. Significant assumptions and judgments with respect to the estimation of the allowance for credit losses include (i) the determination of when a loan has experienced a SICR; (ii) the forecast of FLI for multiple economic scenarios and the probability weighting of those scenarios; (iii) the calculation of both 12-month and lifetime credit losses; and (iv) the application of expert credit judgment. The allowance for credit losses is a significant estimate for which variations in model methodology, assumptions and judgments can have a material effect on the measurement of expected credit losses.

How our audit addressed the key audit matter

We obtained an understanding, evaluated the design and tested the operating effectiveness of management's controls, including those related to technology, over the allowance for credit losses. The controls we tested included, amongst others, controls over model development and validation, economic forecasting, data completeness and accuracy, and the governance and oversight controls over the review of the overall ECL, including the application of expert credit judgment.

To test the allowance for credit losses, amongst other procedures, we assessed, with the assistance of our credit risk specialists, whether the methodology and assumptions used in significant models that estimate ECL are consistent with the requirements of IFRS, CIBC's own historical data and industry standards. This included an assessment of the thresholds used to determine a SICR. For a sample of FLI variables, with the assistance of our economic specialists, we evaluated management's forecasting methodology and compared management's FLI to independently derived forecasts and publicly available information. We also evaluated the scenario probability weights used in the ECL models. On a sample basis, we independently recalculated the ECL. We assessed the application of management's expert credit judgment by evaluating that the amounts recorded were reflective of the credit quality and macroeconomic trends, among other factors. We tested the completeness and accuracy of data used in the measurement of the ECL. We also assessed the adequacy of the allowance for credit loss financial statement note disclosures.

Fair value measurement of derivatives

Key audit matter

As more fully described in Note 2 and Note 12 of the consolidated financial statements, CIBC has recognized $24 billion in derivative assets and $25 billion in derivative liabilities. The portfolio of derivative instruments is presented by level within the fair value hierarchy, with a majority of the portfolio classified as Level 2. While derivative instruments classified as Level 1 have quoted market prices, those classified as Level 2 and 3 require valuation techniques that use observable and non-observable market inputs, and involve the application of management judgment.

Auditing the valuation of certain derivatives was complex and required the application of significant auditor judgment, as well as involvement of valuation specialists for those derivatives where the fair value was determined based on complex models and/or where the fair value was calculated based on non-observable market inputs. The significant inputs and assumptions used to determine fair value, among other factors, included interest rates, foreign exchange rates, equity prices, commodity prices, correlations and volatilities. The valuation of derivatives is sensitive to these inputs as they are forward-looking and could be affected by future economic and market conditions.

How our audit addressed the key audit matter

We obtained an understanding, evaluated the design and tested the operating effectiveness of management's controls, including those related to technology, over the valuation of CIBC's derivatives portfolio. For example, we tested controls over the development and validation of models used to determine the fair value of derivatives, as well as controls over the independent price verification process, which includes a review of the significant inputs described above.

To test the valuation of these derivatives, our audit procedures included, among others, an evaluation of the methodologies and significant inputs used by CIBC. With the assistance of our valuation specialists, we performed an independent valuation for a sample of derivatives to assess the modelling assumptions and significant inputs used by CIBC to estimate the fair value. We independently obtained significant inputs and assumptions from external market data in performing our independent valuation. For a sample of models and with the assistance of our valuation specialists, we assessed the valuation methodologies used by CIBC to determine fair value. We also assessed the adequacy of the disclosures related to the fair value measurement of derivatives.

Measurement of uncertain tax provisions

Key audit matter

CIBC describes its significant accounting judgments, estimates and assumptions in relation to accounting for uncertainty in income taxes in Note 19 of the consolidated financial statements. CIBC operates in a tax environment with constantly evolving and complex tax legislation for financial institutions. Uncertainty in tax positions may arise as tax legislation is subject to interpretation. Estimating uncertain tax provisions requires management judgment to be applied in the interpretation of tax laws across the various jurisdictions in which CIBC operates. This includes judgment in the determination of whether it is probable that CIBC will have to make a payment to tax authorities relating to certain complex tax positions and, when probable, the measurement of such provision when recognized.

Auditing the recognition and measurement of CIBC's uncertain tax provisions required the involvement of our tax professionals and the application of judgment, including the interpretation of tax legislation and jurisprudence.

How our audit addressed the key audit matter

We obtained an understanding, evaluated the design, and tested the operating effectiveness of management's controls over the recognition and measurement of CIBC's uncertain tax provisions. This included controls over management's assessment of the technical merits of tax positions and the process related to the measurement of any related income tax provisions.

With the assistance of our tax professionals, our audit procedures included, among others, an assessment of the technical merits of income tax positions taken by CIBC and any related uncertain tax provisions recorded. Furthermore, we reviewed and evaluated correspondence from the relevant income tax authorities, income tax advice obtained by CIBC from external advisors, and CIBC's internal documentation with respect to uncertain tax positions. We evaluated the reasonability of CIBC's treatment of any new information received during the year relating to the amounts recorded. We evaluated the application of CIBC's accounting policy for income taxes and whether it had been applied consistently and is in accordance with IFRS and assessed the adequacy of income tax disclosures.

Other information

Management is responsible for the other information. The other information comprises:

- Management's discussion and analysis; and
- The information, other than the consolidated financial statements and our auditor's report thereon, in the Annual Report.

Our opinion on the consolidated financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated.

We obtained management's discussion and analysis and the Annual Report prior to the date of this auditor's report. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact in this auditor's report. We have nothing to report in this regard.

Responsibilities of management and those charged with governance for the consolidated financial statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with IFRS, 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.

In preparing the consolidated financial statements, management is responsible for assessing CIBC's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate CIBC or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing CIBC's financial reporting process.

Auditor's responsibilities for the audit of the consolidated financial statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of CIBC's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on CIBC's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause CIBC to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within CIBC to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

/s/ Ernst & Young LLP
Chartered Professional Accountants
Licensed Public Accountants
Toronto, Canada
December 4, 2019

Report of independent registered public accounting firm

To the shareholders and directors of Canadian Imperial Bank of Commerce

Opinion on the consolidated financial statements

We have audited the accompanying consolidated balance sheets of Canadian Imperial Bank of Commerce (CIBC) as of October 31, 2019 and 2018, the related consolidated statements of income, comprehensive income, changes in equity and cash flows for each of the years in the three-year period ended October 31, 2019, and the related notes (collectively referred to as the "consolidated financial statements").

In our opinion, the consolidated financial statements present fairly, in all material respects, the consolidated financial position of CIBC at October 31, 2019 and 2018, and its consolidated financial performance and its consolidated cash flows for each of the years in the three-year period ended October 31, 2019 in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board.

Adoption of IFRS 9

As discussed in Note 1 to the consolidated financial statements, CIBC changed its method of accounting for the classification and measurement of financial instruments in 2018 due to the adoption of IFRS 9 "Financial Instruments". Our opinion is not qualified with respect to this matter.

Report on internal control over financial reporting

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), CIBC's internal control over financial reporting as of October 31, 2019, based on criteria established in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated December 4, 2019 expressed an unqualified opinion thereon.

Basis for opinion

These consolidated financial statements are the responsibility of CIBC's management. Our responsibility is to express an opinion on CIBC's consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to CIBC in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical audit matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Allowance for credit losses

Description of the matter

As more fully described in Note 1 and Note 5 to the consolidated financial statements, CIBC has used an expected credit loss (ECL) model to recognize $1,915 million in allowances for credit losses on its consolidated balance sheet. ECL allowances represent an unbiased and probability-weighted amount, which is determined by evaluating a range of possible outcomes and reasonable and supportable information about past events, current conditions and forecasts of future economic conditions. Forward-looking information (FLI), which involves significant judgment, is explicitly incorporated into the estimation of ECL allowances. ECL allowances are measured at amounts equal to either (i) 12-month ECL; or (ii) lifetime ECL for those financial instruments that have experienced a significant increase in credit risk (SICR) since initial recognition or when there is objective evidence of impairment.

Auditing the allowance for credit losses was complex and required the involvement of specialists due to the inherent complexity of the models, assumptions, judgments and the interrelationship of these variables in measuring the ECL. Significant assumptions and judgments with respect to the estimation of the allowance for credit losses include (i) the determination of when a loan has experienced a SICR; (ii) the forecast of FLI for multiple economic scenarios and the probability weighting of those scenarios; (iii) the calculation of both 12-month and lifetime credit losses; and (iv) the application of expert credit judgment. The allowance for credit losses is a significant estimate for which variations in model methodology, assumptions and judgments can have a material effect on the measurement of expected credit losses.

How we addressed the matter in our audit

We obtained an understanding, evaluated the design and tested the operating effectiveness of management's controls, including those related to technology, over the allowance for credit losses. The controls we tested included, amongst others, controls over model development and validation, economic forecasting, data completeness and accuracy, and the governance and oversight controls over the review of the overall ECL, including the application of expert credit judgment.

To test the allowance for credit losses, amongst other procedures, we assessed, with the assistance of our credit risk specialists, whether the methodology and assumptions used in significant models that estimate ECL are consistent with the requirements of IFRS, CIBC's own historical data and industry standards. This included an assessment of the thresholds used to determine a SICR. For a sample of FLI variables, with the assistance of our economic specialists, we evaluated management's forecasting methodology and compared management's FLI to independently derived forecasts and publicly available information. We also evaluated the scenario probability weights used in the ECL models. On a sample basis, we independently recalculated the ECL. We assessed the application of management's expert credit judgment by evaluating that the amounts recorded were reflective of the credit quality and macroeconomic trends, among other factors. We tested the completeness and accuracy of data used in the measurement of the ECL. We also assessed the adequacy of the allowance for credit loss financial statement note disclosures.

Fair value measurement of derivatives

Description of the matter

As more fully described in Note 2 and Note 12 of the consolidated financial statements, CIBC has recognized $24 billion in derivative assets and $25 billion in derivative liabilities. The portfolio of derivative instruments is presented by level within the fair value hierarchy, with a majority of the portfolio classified as Level 2. While derivative instruments classified as Level 1 have quoted market prices, those classified as Level 2 and 3 require valuation techniques that use observable and non-observable market inputs, and involve the application of management judgment.

Auditing the valuation of certain derivatives was complex and required the application of significant auditor judgment, as well as involvement of valuation specialists for those derivatives where the fair value was determined based on complex models and/or where the fair value was calculated based on non-observable market inputs. The significant inputs and assumptions used to determine fair value, among other factors, included interest rates, foreign exchange rates, equity prices, commodity prices, correlations and volatilities. The valuation of derivatives is sensitive to these inputs as they are forward-looking and could be affected by future economic and market conditions.

How we addressed the matter in our audit

We obtained an understanding, evaluated the design and tested the operating effectiveness of management's controls, including those related to technology, over the valuation of CIBC's derivatives portfolio. For example, we tested controls over the development and validation of models used to determine the fair value of derivatives, as well as controls over the independent price verification process, which includes a review of the significant inputs described above.

To test the valuation of these derivatives, our audit procedures included, among others, an evaluation of the methodologies and significant inputs used by CIBC. With the assistance of our valuation specialists, we performed an independent valuation for a sample of derivatives to assess the modelling assumptions and significant inputs used by CIBC to estimate the fair value. We independently obtained significant inputs and assumptions from external market data in performing our independent valuation. For a sample of models and with the assistance of our valuation specialists, we assessed the valuation methodologies used by CIBC to determine fair value. We also assessed the adequacy of the disclosures related to the fair value measurement of derivatives.

Measurement of uncertain tax provisions

Description of the matter

CIBC describes its significant accounting judgments, estimates and assumptions in relation to accounting for uncertainty in income taxes in Note 19 of the consolidated financial statements. CIBC operates in a tax environment with constantly evolving and complex tax legislation for financial institutions. Uncertainty in tax positions may arise as tax legislation is subject to interpretation. Estimating uncertain tax provisions requires management judgment to be applied in the interpretation of tax laws across the various jurisdictions in which CIBC operates. This includes judgment in the determination of whether it is probable that CIBC will have to make a payment to tax authorities relating to certain complex tax positions and, when probable, the measurement of such provision when recognized.

Auditing the recognition and measurement of CIBC’s uncertain tax provisions required the involvement of our tax professionals and the application of judgment, including the interpretation of tax legislation and jurisprudence.

How we addressed the matter in our audit

We obtained an understanding, evaluated the design, and tested the operating effectiveness of management’s controls over the recognition and measurement of CIBC’s uncertain tax provisions. This included controls over management’s assessment of the technical merits of tax positions and the process related to the measurement of any related income tax provisions.

With the assistance of our tax professionals, our audit procedures included, among others, an assessment of the technical merits of income tax positions taken by CIBC and any related uncertain tax provisions recorded. Furthermore, we reviewed and evaluated correspondence from the relevant income tax authorities, income tax advice obtained by CIBC from external advisors, and CIBC’s internal documentation with respect to uncertain tax positions. We evaluated the reasonability of CIBC’s treatment of any new information received during the year relating to the amounts recorded. We evaluated the application of CIBC’s accounting policy for income taxes and whether it had been applied consistently and is in accordance with IFRS and assessed the adequacy of income tax disclosures.

We have served as CIBC’s auditor since 2002.

/s/ Ernst & Young LLP
Chartered Professional Accountants
Licensed Public Accountants
Toronto, Canada
December 4, 2019

Report of independent registered public accounting firm

To the shareholders and directors of Canadian Imperial Bank of Commerce

Opinion on internal control over financial reporting

We have audited Canadian Imperial Bank of Commerce's (CIBC) internal control over financial reporting as of October 31, 2019, based on criteria established in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, CIBC maintained, in all material respects, effective internal control over financial reporting as of October 31, 2019, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of CIBC as of October 31, 2019 and 2018, and the related consolidated statements of income, comprehensive income, changes in equity and cash flows for each of the years in the three-year period ended October 31, 2019, and the related notes and our report dated December 4, 2019 expressed an unqualified opinion thereon.

Basis for opinion

CIBC'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 annual report on internal control over financial reporting" section contained in the accompanying management's discussion and analysis. Our responsibility is to express an opinion on CIBC's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to CIBC in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit 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.

Definition and limitations of internal control over financial reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP
Chartered Professional Accountants
Licensed Public Accountants
Toronto, Canada
December 4, 2019

Consolidated balance sheet

Millions of Canadian dollars, as at October 31	2019	2018
ASSETS		
Cash and non-interest-bearing deposits with banks	$ 3,840	$ 4,380
Interest-bearing deposits with banks	13,519	13,311
Securities (Note 4)	121,310	101,664
Cash collateral on securities borrowed	3,664	5,488
Securities purchased under resale agreements	56,111	43,450
Loans (Note 5)		
Residential mortgages	208,652	207,749
Personal	43,651	43,058
Credit card	12,755	12,673
Business and government	125,798	109,555
Allowance for credit losses	(1,915)	(1,639)
	388,941	371,396
Other		
Derivative instruments (Note 12)	23,895	21,431
Customers' liability under acceptances	9,167	10,265
Land, buildings and equipment (Note 7)	1,813	1,795
Goodwill (Note 8)	5,449	5,564
Software and other intangible assets (Note 8)	1,969	1,945
Investments in equity-accounted associates and joint ventures (Note 25)	586	526
Deferred tax assets (Note 19)	517	601
Other assets (Note 9)	20,823	15,283
	64,219	57,410
	$ 651,604	$ 597,099
LIABILITIES AND EQUITY		
Deposits (Note 10)		
Personal	$ 178,091	$ 163,879
Business and government	257,502	240,149
Bank	11,224	14,380
Secured borrowings	38,895	42,607
	485,712	461,015
Obligations related to securities sold short	15,635	13,782
Cash collateral on securities lent	1,822	2,731
Obligations related to securities sold under repurchase agreements	51,801	30,840
Other		
Derivative instruments (Note 12)	25,113	20,973
Acceptances	9,188	10,296
Deferred tax liabilities (Note 19)	38	43
Other liabilities (Note 11)	19,031	18,223
	53,370	49,535
Subordinated indebtedness (Note 14)	4,684	4,080
Equity		
Preferred shares (Note 15)	2,825	2,250
Common shares (Note 15)	13,591	13,243
Contributed surplus	125	136
Retained earnings	20,972	18,537
Accumulated other comprehensive income (AOCI)	881	777
Total shareholders' equity	38,394	34,943
Non-controlling interests	186	173
Total equity	38,580	35,116
	$ 651,604	$ 597,099

The accompanying notes and shaded sections in "MD&A – Management of risk" are an integral part of these consolidated financial statements.

Victor G. Dodig
President and Chief Executive Officer

Nicholas D. Le Pan
Director

Consolidated statement of income

Millions of Canadian dollars, except as noted, for the year ended October 31	2019	2018	2017
Interest income[1]			
Loans	$ 16,048	$ 13,901	$ 11,028
Securities	2,779	2,269	1,890
Securities borrowed or purchased under resale agreements	1,474	1,053	495
Deposits with banks	396	282	180
	20,697	17,505	13,593
Interest expense			
Deposits	8,422	6,240	3,953
Securities sold short	291	272	226
Securities lent or sold under repurchase agreements	1,198	736	254
Subordinated indebtedness	198	174	142
Other	37	18	41
	10,146	7,440	4,616
Net interest income	10,551	10,065	8,977
Non-interest income			
Underwriting and advisory fees	475	420	452
Deposit and payment fees	908	877	843
Credit fees	958	851	744
Card fees	458	510	463
Investment management and custodial fees	1,305	1,247	1,034
Mutual fund fees	1,595	1,624	1,573
Insurance fees, net of claims	430	431	427
Commissions on securities transactions	313	357	349
Gains (losses) from financial instruments measured/designated at fair value through profit or loss (FVTPL), net (2017: Trading income (loss) and designated at fair value (FVO) gains (losses), net)	761	603	227
Gains (losses) from debt securities measured at fair value through other comprehensive income (FVOCI) and amortized cost, net (2017: Available-for-sale (AFS) debt and equity securities gains, net) (Note 4)	34	(35)	143
Foreign exchange other than trading (FXOTT)	304	310	252
Income from equity-accounted associates and joint ventures (Note 25)	92	121	101
Other	427	453	695
	8,060	7,769	7,303
Total revenue	18,611	17,834	16,280
Provision for credit losses (Note 5)	1,286	870	829
Non-interest expenses			
Employee compensation and benefits	5,726	5,665	5,198
Occupancy costs	892	875	822
Computer, software and office equipment	1,874	1,742	1,630
Communications	303	315	317
Advertising and business development	359	327	282
Professional fees	226	226	229
Business and capital taxes	110	103	96
Other (Notes 3 and 8)	1,366	1,005	997
	10,856	10,258	9,571
Income before income taxes	6,469	6,706	5,880
Income taxes (Note 19)	1,348	1,422	1,162
Net income	$ 5,121	$ 5,284	$ 4,718
Net income attributable to non-controlling interests	$ 25	$ 17	$ 19
Preferred shareholders	$ 111	$ 89	$ 52
Common shareholders	4,985	5,178	4,647
Net income attributable to equity shareholders	$ 5,096	$ 5,267	$ 4,699
Earnings per share (EPS) (in dollars) (Note 20)			
Basic	$ 11.22	$ 11.69	$ 11.26
Diluted	11.19	11.65	11.24
Dividends per common share (in dollars) (Note 15)	5.60	5.32	5.08

(1) Interest income included $18.8 billion for the year ended October 31, 2019 (2018: $16.0 billion) calculated based on the effective interest rate method.

The accompanying notes and shaded sections in "MD&A – Management of risk" are an integral part of these consolidated financial statements.

Consolidated statement of comprehensive income

Millions of Canadian dollars, for the year ended October 31	**2019**	2018	2017
Net income	**$ 5,121**	$ 5,284	$ 4,718
Other comprehensive income (OCI), net of income tax, that is subject to subsequent reclassification to net income			
Net foreign currency translation adjustments			
Net gains (losses) on investments in foreign operations	**(21)**	635	(1,148)
Net gains (losses) on hedges of investments in foreign operations	**(10)**	(349)	772
	(31)	286	(376)
Net change in debt securities measured at FVOCI (2017: AFS debt and equity securities)			
Net gains (losses) on securities measured at FVOCI	**244**	(142)	6
Net (gains) losses reclassified to net income	**(28)**	(29)	(107)
	216	(171)	(101)
Net change in cash flow hedges			
Net gains (losses) on derivatives designated as cash flow hedges	**137**	(25)	70
Net (gains) losses reclassified to net income	**(6)**	(26)	(60)
	131	(51)	10
OCI, net of income tax, that is not subject to subsequent reclassification to net income			
Net gains (losses) on post-employment defined benefit plans	**(220)**	226	139
Net gains (losses) due to fair value change of FVO liabilities attributable to changes in credit risk	**28**	(2)	(10)
Net gains (losses) on equity securities designated at FVOCI	**(2)**	29	n/a
Total OCI (1)	**122**	317	(338)
Comprehensive income	**$ 5,243**	$ 5,601	$ 4,380
Comprehensive income attributable to non-controlling interests	**$ 25**	$ 17	$ 19
Preferred shareholders	**$ 111**	$ 89	$ 52
Common shareholders	**5,107**	5,495	4,309
Comprehensive income attributable to equity shareholders	**$ 5,218**	$ 5,584	$ 4,361

(1) Includes $44 million of gains for 2019 (2018: $19 million of losses; 2017: $24 million of losses) relating to our investments in equity-accounted associates and joint ventures.
n/a Not applicable.

Millions of Canadian dollars, for the year ended October 31	**2019**	2018	2017
Income tax (expense) benefit allocated to each component of OCI			
Subject to subsequent reclassification to net income			
Net foreign currency translation adjustments			
Net gains (losses) on investments in foreign operations	**$ –**	$ (31)	$ 42
Net gains (losses) on hedges of investments in foreign operations	**(16)**	43	(170)
	(16)	12	(128)
Net change in debt securities measured at FVOCI (2017: AFS debt and equity securities)			
Net gains (losses) on securities measured at FVOCI	**(36)**	18	(23)
Net (gains) losses reclassified to net income	**10**	8	36
	(26)	26	13
Net change in cash flow hedges			
Net gains (losses) on derivatives designated as cash flow hedges	**(49)**	8	(23)
Net (gains) losses reclassified to net income	**2**	9	22
	(47)	17	(1)
Not subject to subsequent reclassification to net income			
Net gains (losses) on post-employment defined benefit plans	**77**	(87)	(54)
Net gains (losses) due to fair value change of FVO liabilities attributable to changes in credit risk	**(10)**	1	4
Net gains (losses) on equity securities designated at FVOCI	**–**	(11)	n/a
	$ (22)	$ (42)	$ (166)

n/a Not applicable.

The accompanying notes and shaded sections in "MD&A – Management of risk" are an integral part of these consolidated financial statements.

Consolidated statement of changes in equity

Millions of Canadian dollars, for the year ended October 31		2019		2018		2017
Preferred shares (Note 15)						
Balance at beginning of year	**$**	**2,250**	$	1,797	$	1,000
Issue of preferred shares		**575**		450		800
Treasury shares		**–**		3		(3)
Balance at end of year	**$**	**2,825**	$	2,250	$	1,797
Common shares (Note 15)						
Balance at beginning of year	**$**	**13,243**	$	12,548	$	8,026
Issued pursuant to the acquisition of The PrivateBank		**–**		194		3,443
Issued pursuant to the acquisition of Geneva Advisors		**–**		–		126
Issued pursuant to the acquisition of Wellington Financial		**–**		47		–
Other issue of common shares		**377**		555		957
Purchase of common shares for cancellation		**(30)**		(104)		–
Treasury shares		**1**		3		(4)
Balance at end of year	**$**	**13,591**	$	13,243	$	12,548
Contributed surplus						
Balance at beginning of year	**$**	**136**	$	137	$	72
Issue of replacement equity-settled awards pursuant to the acquisition of The PrivateBank		**–**		–		72
Compensation expense arising from equity-settled share-based awards		**16**		31		7
Exercise of stock options and settlement of other equity-settled share-based awards		**(27)**		(32)		(15)
Other		**–**		–		1
Balance at end of year	**$**	**125**	$	136	$	137
Retained earnings						
Balance at beginning of year	**$**	**18,537**	$	16,101	$	13,584
Impact of adopting IFRS 9 at November 1, 2017		**n/a**		(144)		n/a
Impact of adopting IFRS 15 at November 1, 2018		**6**		n/a		n/a
Balance at beginning of year		**18,543**		15,957		n/a
Net income attributable to equity shareholders		**5,096**		5,267		4,699
Dividends (Note 15)						
Preferred		**(111)**		(89)		(52)
Common		**(2,488)**		(2,356)		(2,121)
Premium on purchase of common shares for cancellation		**(79)**		(313)		–
Realized gains (losses) on equity securities designated at FVOCI reclassified from AOCI		**18**		49		n/a
Other [(1)]		**(7)**		22		(9)
Balance at end of year	**$**	**20,972**	$	18,537	$	16,101
AOCI, net of income tax						
AOCI, net of income tax, that is subject to subsequent reclassification to net income						
Net foreign currency translation adjustments						
Balance at beginning of year	**$**	**1,024**	$	738	$	1,114
Net change in foreign currency translation adjustments		**(31)**		286		(376)
Balance at end of year	**$**	**993**	$	1,024	$	738
Net gains (losses) on debt securities measured at FVOCI (2017: AFS debt and equity securities)						
Balance at beginning of year under IAS 39		**n/a**	$	60	$	161
Impact of adopting IFRS 9 at November 1, 2017		**n/a**		(28)		n/a
Balance at beginning of year under IFRS 9	**$**	**(139)**		32		n/a
Net change in securities measured at FVOCI		**216**		(171)		(101)
Balance at end of year	**$**	**77**	$	(139)	$	60
Net gains (losses) on cash flow hedges						
Balance at beginning of year	**$**	**(18)**	$	33	$	23
Net change in cash flow hedges		**131**		(51)		10
Balance at end of year	**$**	**113**	$	(18)	$	33
AOCI, net of income tax, that is not subject to subsequent reclassification to net income						
Net gains (losses) on post-employment defined benefit plans						
Balance at beginning of year	**$**	**(143)**	$	(369)	$	(508)
Net change in post-employment defined benefit plans		**(220)**		226		139
Balance at end of year	**$**	**(363)**	$	(143)	$	(369)
Net gains (losses) due to fair value change of FVO liabilities attributable to changes in credit risk						
Balance at beginning of year	**$**	**(12)**	$	(10)	$	–
Net change attributable to changes in credit risk		**28**		(2)		(10)
Balance at end of year	**$**	**16**	$	(12)	$	(10)
Net gains (losses) on equity securities designated at FVOCI						
Impact of adopting IFRS 9 at November 1, 2017		**n/a**	$	85		n/a
Balance at beginning of year under IFRS 9		**65**		85		n/a
Net gains (losses) on equity securities designated at FVOCI	**$**	**(2)**		29		n/a
Realized gains (losses) on equity securities designated at FVOCI reclassified to retained earnings [(2)]		**(18)**		(49)		n/a
Balance at end of year	**$**	**45**	$	65		n/a
Total AOCI, net of income tax	**$**	**881**	$	777	$	452
Non-controlling interests						
Balance at beginning of year under IAS 39		**n/a**	$	202	$	201
Impact of adopting IFRS 9 at November 1, 2017		**n/a**		(4)		n/a
Balance at beginning of year under IFRS 9	**$**	**173**		198		n/a
Net income attributable to non-controlling interests		**25**		17		19
Dividends		**(11)**		(31)		(8)
Other		**(1)**		(11)		(10)
Balance at end of year	**$**	**186**	$	173	$	202
Equity at end of year	**$**	**38,580**	$	35,116	$	31,237

(1) In 2018, includes the recognition of loss carryforwards relating to foreign exchange translation amounts on CIBC's net investment in foreign operations that were previously reclassified to retained earnings as part of our transition to IFRS in 2012.
(2) Includes nil reclassified to retained earnings (2018: $11 million; 2017: n/a), relating to our investments in equity-accounted associates and joint ventures.
n/a Not applicable.

The accompanying notes and shaded sections in "MD&A – Management of risk" are an integral part of these consolidated financial statements.

Consolidated statement of cash flows

Millions of Canadian dollars, for the year ended October 31	**2019**	2018	2017
Cash flows provided by (used in) operating activities			
Net income	**$ 5,121**	$ 5,284	$ 4,718
Adjustments to reconcile net income to cash flows provided by (used in) operating activities:			
Provision for credit losses	**1,286**	870	829
Amortization and impairment [(1)]	**838**	657	542
Stock options and restricted shares expense	**16**	31	7
Deferred income taxes	**108**	69	21
Losses (gains) from debt securities measured at FVOCI and amortized cost (2017: AFS debt and equity securities (gains), net)	**(34)**	35	(143)
Net losses (gains) on disposal of land, buildings and equipment	**(7)**	(14)	(305)
Other non-cash items, net	**(229)**	(292)	(15)
Net changes in operating assets and liabilities			
Interest-bearing deposits with banks	**(208)**	(2,599)	394
Loans, net of repayments	**(17,653)**	(16,155)	(30,547)
Deposits, net of withdrawals	**19,838**	20,770	18,407
Obligations related to securities sold short	**1,853**	69	3,375
Accrued interest receivable	**(122)**	(341)	(34)
Accrued interest payable	**138**	205	90
Derivative assets	**(2,484)**	2,780	3,588
Derivative liabilities	**4,037**	(2,084)	(5,549)
Securities measured at FVTPL (2017: Trading and FVO securities)	**(1,826)**	(647)	(657)
Other assets and liabilities designated at fair value (2017: Other FVO assets and liabilities)	**1,222**	(380)	1,071
Current income taxes	**(309)**	(301)	(1,063)
Cash collateral on securities lent	**(909)**	707	(494)
Obligations related to securities sold under repurchase agreements	**20,961**	2,869	16,277
Cash collateral on securities borrowed	**1,824**	(453)	398
Securities purchased under resale agreements	**(10,785)**	(1,195)	(10,556)
Other, net	**(4,041)**	(18)	2,103
	18,635	9,867	2,457
Cash flows provided by (used in) financing activities			
Issue of subordinated indebtedness	**1,500**	1,534	–
Redemption/repurchase/maturity of subordinated indebtedness	**(1,001)**	(638)	(55)
Issue of preferred shares, net of issuance cost	**568**	445	792
Issue of common shares for cash	**157**	186	194
Purchase of common shares for cancellation	**(109)**	(417)	–
Net sale (purchase) of treasury shares	**1**	6	(7)
Dividends paid	**(2,406)**	(2,109)	(1,425)
	(1,290)	(993)	(501)
Cash flows provided by (used in) investing activities			
Purchase of securities measured/designated at FVOCI and amortized cost (2017: Purchase of AFS securities)	**(42,304)**	(33,011)	(37,864)
Proceeds from sale of securities measured/designated at FVOCI and amortized cost (2017: Proceeds from sale of AFS securities)	**13,764**	12,992	18,787
Proceeds from maturity of debt securities measured at FVOCI and amortized cost (2017: Proceeds from maturity of AFS securities)	**10,948**	12,402	19,368
Cash used in acquisitions, net of cash acquired	**(25)**	(315)	(2,517)
Net cash provided by dispositions of investments in equity-accounted associates and joint ventures	**-**	200	60
Net sale (purchase) of land, buildings and equipment	**(272)**	(255)	201
	(17,889)	(7,987)	(1,965)
Effect of exchange rate changes on cash and non-interest-bearing deposits with banks	**4**	53	(51)
Net increase (decrease) in cash and non-interest-bearing deposits with banks during year	**(540)**	940	(60)
Cash and non-interest-bearing deposits with banks at beginning of year	**4,380**	3,440	3,500
Cash and non-interest-bearing deposits with banks at end of year [(2)]	**$ 3,840**	$ 4,380	$ 3,440
Cash interest paid	**$ 10,008**	$ 7,235	$ 4,526
Cash interest received	**19,840**	16,440	12,611
Cash dividends received	**735**	724	949
Cash income taxes paid	**1,549**	1,654	2,204

(1) Comprises amortization and impairment of buildings, furniture, equipment, leasehold improvements, goodwill, software and other intangible assets.
(2) Includes restricted balance of $479 million (2018: $438 million; 2017: $436 million).

The accompanying notes and shaded sections in "MD&A – Management of risk" are an integral part of these consolidated financial statements.

Notes to the consolidated financial statements

Canadian Imperial Bank of Commerce (CIBC) is a diversified financial institution governed by the *Bank Act* (Canada). CIBC was formed through the amalgamation of the Canadian Bank of Commerce and Imperial Bank of Canada in 1961. Through our four strategic business units (SBUs) – Canadian Personal and Small Business Banking, Canadian Commercial Banking and Wealth Management, U.S. Commercial Banking and Wealth Management, and Capital Markets – CIBC provides a full range of financial products and services to 10 million personal banking, business, public sector and institutional clients in Canada, the U.S. and around the world. Refer to Note 30 for further details on our business units. CIBC is incorporated and domiciled in Canada, with our registered and principal business offices located at Commerce Court, Toronto, Ontario.

Note 1 | Basis of preparation and summary of significant accounting policies

Basis of preparation

The consolidated financial statements of CIBC have been prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB). These consolidated financial statements also comply with Section 308(4) of the *Bank Act* (Canada) and the requirements of the Office of the Superintendent of Financial Institutions (OSFI).

CIBC has consistently applied the same accounting policies throughout all periods presented, except for the adoption of IFRS 9 "Financial Instruments" effective November 1, 2017 and the adoption of IFRS 15 "Revenue from Contracts with Customers" effective November 1, 2018, both of which were adopted without restatement of comparative periods as discussed below under the sections titled "Accounting for financial instruments" and "Fee and commission income".

These consolidated financial statements are presented in millions of Canadian dollars, unless otherwise indicated.

These consolidated financial statements were authorized for issue by the Board of Directors (the Board) on December 4, 2019.

Summary of significant accounting policies

The following paragraphs describe our significant accounting policies.

Use of estimates and assumptions

The preparation of the consolidated financial statements in accordance with IFRS requires management to make estimates and assumptions that affect the recognized and measured amounts of assets, liabilities, net income, comprehensive income and related disclosures. Significant estimates and assumptions are made in the areas of the valuation of financial instruments, allowance for credit losses, the evaluation of whether to consolidate structured entities (SEs), asset impairment, income taxes, provisions and contingent liabilities, post-employment and other long-term benefit plan assumptions and valuation of self-managed loyalty points programs. Actual results could differ from these estimates and assumptions.

Basis of consolidation

We consolidate entities over which we have control. We have control over another entity when we have: (i) power to direct relevant activities of the entity; (ii) exposure, or rights, to variable returns from our involvement with the entity; and (iii) the ability to affect those returns through our power over the entity.

Subsidiaries

Subsidiaries are entities over which CIBC has control. Generally, CIBC has control of its subsidiaries through a shareholding of more than 50% of the voting rights, and has significant exposure to the subsidiaries based on its ownership interests of more than 50%. The effects of potential voting rights that CIBC has the practical ability to exercise are considered when assessing whether control exists. Subsidiaries are consolidated from the date control is obtained by CIBC and are deconsolidated from the date control is lost. Consistent accounting policies are applied for all consolidated subsidiaries. Details of our significant subsidiaries are provided in Note 26.

Structured entities

An SE is an entity that has been designed so that voting or similar rights are not the dominant factor in deciding who controls the entity, such as when any voting rights relate to administrative tasks only and the significant relevant activities are directed by contractual arrangements. SEs often have some or all of the following features or attributes: (i) restricted activities; (ii) a narrow and well-defined objective, such as to securitize our own financial assets or third-party financial assets to provide sources of funding or to provide investment opportunities for investors by passing on risks and rewards associated with the assets of the SE to investors; (iii) insufficient equity to permit the SE to finance its activities without subordinated financial support; or (iv) financing in the form of multiple contractually linked instruments to investors that create concentrations of credit or other risks. Examples of SEs include securitization vehicles, asset-backed financings, and investment funds.

When voting rights are not relevant in deciding whether CIBC has power over an entity, particularly for complex SEs, the assessment of control considers all facts and circumstances, including the purpose and design of the investee, its relationship with other parties and each party's ability to make decisions over significant activities, and whether CIBC is acting as a principal or as an agent.

Consolidation conclusions are reassessed whenever there is a change in the specific facts and circumstances relevant to one or more of the three elements of control. Factors that trigger the reassessment include, but are not limited to, significant changes in ownership structure of the entities, changes in contractual or governance arrangements, provision of a liquidity facility beyond the original terms, transactions with the entities that were not contemplated originally and changes in the financing structure of the entities.

Transactions eliminated on consolidation

All intercompany transactions, balances and unrealized gains and losses on transactions are eliminated on consolidation.

Non-controlling interests

Non-controlling interests are presented on the consolidated balance sheet as a separate component of equity that is distinct from CIBC's shareholders' equity. The net income attributable to non-controlling interests is presented separately in the consolidated statement of income.

Associates and joint ventures

We classify investments in entities over which we have significant influence, and that are neither subsidiaries nor joint ventures, as associates. Significant influence is presumed to exist where we hold, either directly or indirectly, between 20% and 50% of the voting rights of an entity, or, in the case of a limited partnership, where CIBC is a co-general partner. Significant influence also may exist where we hold less than 20% of the voting rights of an entity, for example if we have influence over policy-making processes through representation on the entity's Board of Directors, or by other means. Where we are a party to a contractual arrangement whereby, together with one or more parties, we undertake an economic activity that is subject to joint control, we classify our interest in the venture as a joint venture.

Investments in associates and interests in joint ventures are accounted for using the equity method. Under the equity method, such investments are initially measured at cost, including attributable goodwill and intangible assets, and are adjusted thereafter for the post-acquisition change in our share of the net assets of the investment.

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

Foreign currency translation

Monetary assets and liabilities and non-monetary assets and liabilities measured at fair value that are denominated in foreign currencies are translated into the functional currencies of operations at prevailing exchange rates at the date of the consolidated balance sheet. Revenue and expenses are translated using average monthly exchange rates. Realized and unrealized gains and losses arising from translation into functional currencies are included in the consolidated statement of income, with the exception of unrealized foreign exchange gains and losses on FVOCI equity securities, which are included in AOCI.

Assets and liabilities of foreign operations with a functional currency other than the Canadian dollar, including goodwill and fair value adjustments arising on acquisition, are translated into Canadian dollars at the exchange rates prevailing as at the consolidated balance sheet date, while revenue and expenses of these foreign operations are translated into Canadian dollars at the average monthly exchange rates. Exchange gains and losses arising from the translation of these foreign operations and from the results of hedging the net investment in these foreign operations, net of applicable taxes, are included in Net foreign currency translation adjustments, in AOCI.

Any accumulated exchange gains and losses, including the impact of hedging, and any applicable taxes in AOCI are reclassified into the consolidated statement of income when there is a disposal of a foreign operation, including a partial disposal of a foreign operation that involves the loss of control. On partial disposal of a foreign operation that does not involve the loss of control, the proportionate share of the accumulated exchange gains and losses, including the impact of hedging, and any applicable taxes previously recognized in AOCI are reclassified into the consolidated statement of income.

Accounting for financial instruments

CIBC adopted IFRS 9 "Financial Instruments" (IFRS 9) in place of IAS 39 "Financial Instruments: Recognition and Measurement" (IAS 39) as of November 1, 2017 to comply with OSFI's advisory that requires that domestic systemically important banks (D-SIBs) adopt IFRS 9 for their annual periods beginning on November 1, 2017, one year earlier than required by the IASB. We applied IFRS 9 on a retrospective basis. As permitted, we did not restate our prior period comparative consolidated financial statements. Amounts reported relating to the year ended October 31, 2017 are reported under IAS 39 and are therefore not comparable to the information presented for 2018 or 2019.

The adoption of IFRS 9 in the first quarter of 2018 resulted in changes in accounting policy in two principal areas, classification and measurement and impairment, as described in more detail below. We had previously early adopted the "own credit" provisions of IFRS 9 as of November 1, 2014 and we have elected, as a policy choice permitted under IFRS 9, to continue to apply the hedge accounting requirements of IAS 39.

Classification and measurement of financial instruments under IAS 39

CIBC recognizes financial instruments on its consolidated balance sheet when it becomes a party to the contractual provisions of the instrument.

Under IAS 39, all financial assets were classified at initial recognition as trading, AFS, fair value option (FVO), held-to-maturity (HTM), or loans and receivables, based on the purpose for which the instrument was acquired and its characteristics. All financial assets and derivatives were required to be measured at fair value with the exception of loans and receivables, debt securities classified as HTM, and AFS equity instruments whose fair value could not be reliably measured. Reclassification of non-derivative financial assets out of trading to loans and receivables was allowed when they were no longer held for trading, and if they met the definition of loans and receivables and we had the intention and ability to hold the financial assets for the foreseeable future or until maturity. Reclassification of non-derivative financial assets out of trading to AFS was also allowed under rare circumstances. Non-derivative financial assets could be reclassified out of AFS to loans and receivables if they met the definition of loans and receivables and we had the intention and ability to hold the financial assets for the foreseeable future or until maturity, or reclassified out of AFS to HTM if we had the intention to hold the financial assets until maturity.

Financial liabilities, other than derivatives, obligations related to securities sold short and FVO liabilities, were measured at amortized cost. Derivatives, obligations related to securities sold short and FVO liabilities were measured at fair value. Interest expense was recognized on an accrual basis using the effective interest rate method.

Loans and receivables

Under IAS 39, loans and receivables were defined as non-derivative financial assets with fixed or determinable payments that did not have a quoted market price in an active market and for which we did not intend to sell immediately or in the near term at the time of inception. Loans and receivables were recognized initially at fair value, which represents the cash advanced to the borrower plus direct and incremental transaction costs. Subsequently, they were measured at amortized cost, using the effective interest rate method, net of an allowance for credit losses. Interest income was recognized on an accrual basis using the effective interest rate method. Certain loans and receivables could be designated at fair value (see below).

Trading financial instruments

Under IAS 39, trading financial instruments were defined as assets and liabilities that were held for trading activities or that were part of a managed portfolio with a pattern of short-term profit-taking. These were measured initially at fair value. Loans and receivables that we intended to sell immediately or in the near term were classified as trading financial instruments.

Trading financial instruments were remeasured at fair value as at the consolidated balance sheet date. Gains and losses realized on disposition and unrealized gains and losses from changes in fair value were included in Non-interest income as Trading income (loss), except to the extent they were economically hedging an FVO asset or liability, in which case the gains and losses were included in FVO gains (losses), net. Dividends and interest income earned on trading securities and dividends and interest expense incurred on securities sold short were included in Interest income and Interest expense, respectively.

AFS financial assets
Under IAS 39, AFS financial assets were defined as non-derivative financial assets that were not classified as trading, FVO or loans and receivables, and were measured initially at fair value, plus direct and incremental transaction costs. Only equity instruments whose fair value could not be reliably measured were measured at cost. We determined that all of our equity securities had reliable fair values. As a result, all AFS financial assets were remeasured at FVOCI subsequent to initial recognition, except that foreign exchange gains or losses on AFS debt instruments were recognized in the consolidated statement of income. Unrealized foreign exchange gains or losses on AFS equity securities, along with all other fair value changes, were recognized in OCI until the investment was sold or impaired, whereupon the cumulative gains and losses previously recognized in OCI were transferred from AOCI to the consolidated statement of income. Realized gains and losses on sale, determined on an average cost basis, and write-downs to reflect impairment were included in AFS securities gains (losses), net. Dividends and interest income from AFS financial assets were included in Interest income.

Designated at fair value financial instruments
Under IAS 39, FVO financial instruments were defined as those that we designated on initial recognition as instruments that we would measure at fair value through the consolidated statement of income. This designation, once made, was irrevocable. In addition to the requirement that reliable fair values were available, there were restrictions imposed by IFRS and by OSFI on the use of this designation. The criteria for applying the FVO at inception were met when: (i) the application of the FVO eliminated or significantly reduced the measurement inconsistency that otherwise would arise from measuring assets or liabilities on a different basis; or (ii) the financial instruments were part of a portfolio which was managed on a fair value basis, in accordance with our investment strategy, and were reported internally on that basis. FVO could also be applied to financial instruments that had one or more embedded derivatives that would otherwise require bifurcation as they significantly modified the cash flows of the contract.

Gains and losses realized on dispositions and unrealized gains and losses from changes in fair value of FVO financial instruments, and gains and losses arising from changes in fair value of derivatives, trading securities and obligations related to securities sold short that were managed as economic hedges of the FVO financial instruments, were included in FVO gains (losses), net. Dividends and interest earned and interest expense incurred on FVO assets and liabilities were included in Interest income and Interest expense, respectively. Changes in the fair value of FVO liabilities that were attributable to changes in own credit risk were recognized in OCI.

Classification and measurement of financial instruments under IFRS 9
Under IFRS 9, all financial assets must be classified at initial recognition as financial instruments mandatorily measured at FVTPL (trading and non-trading), financial instruments measured at amortized cost, debt financial instruments measured at FVOCI, equity financial instruments designated at FVOCI, or financial instruments designated at FVTPL, based on the contractual cash flow characteristics of the financial assets and the business model under which the financial assets are managed. All financial assets and derivatives are required to be measured at fair value with the exception of financial assets measured at amortized cost. Financial assets are required to be reclassified when and only when the business model under which they are managed has changed. All reclassifications are to be applied prospectively from the reclassification date.

The IFRS 9 classification and measurement model requires that all debt instrument financial assets that do not meet a "solely payment of principal and interest" (SPPI) test, including those that contain embedded derivatives, be classified at initial recognition as FVTPL. The SPPI test is conducted to identify whether the contractual cash flows of a financial instrument are "solely payments of principal and interest" such that any variability in the contractual cash flows is consistent with a "basic lending arrangement". "Principal" for the purpose of this test is defined as the fair value of the financial asset at initial recognition and may change over the life of the financial asset, for example, due to repayments of principal or amortization of the premium/ discount. "Interest" for the purpose of this test is defined as the consideration for the time value of money and credit risk, which are the most significant elements of interest within a lending arrangement. Contractual terms that introduce a more than de minimis exposure to risks or volatility in the contractual cash flows that are unrelated to a basic lending arrangement do not give rise to contractual cash flows that are solely payments of principal and interest on the amount outstanding. The intent of the SPPI test is to ensure that debt instruments that contain non-basic lending features, such as conversion options and equity-linked payouts, are measured at FVTPL.

For debt instrument financial assets that meet the SPPI test, classification at initial recognition is determined based on the business model under which these instruments are managed. Debt instruments that are managed on a "held for trading" or "fair value" basis are classified as FVTPL. Debt instruments that are managed on a "hold to collect and for sale" basis are classified as FVOCI for debt. Debt instruments that are managed on a "hold to collect" basis are classified as amortized cost. We consider the following in our determination of the applicable business model for financial assets:

I) The business purpose of the portfolio;
II) The risks that are being managed and the type of business activities that are being carried out on a day-to-day basis to manage the risks;
III) The basis on which performance of the portfolio is being evaluated; and
IV) The frequency and significance of sales activity.

All equity instrument financial assets are classified at initial recognition as FVTPL unless they are not held with the intent for short-term profit-taking and an irrevocable designation is made to classify the instrument as FVOCI for equities.

The classification and measurement of financial liabilities remain essentially unchanged from the IAS 39 requirements, except that changes in the fair value of liabilities designated at FVTPL using the FVO which are attributable to changes in own credit risk are presented in OCI, rather than profit or loss. We early adopted the "own credit" provisions of IFRS 9 as of November 1, 2014.

Derivatives continue to be measured at FVTPL under IFRS 9, except to the extent that they are designated in a hedging relationship, in which case the IAS 39 hedge accounting requirements continue to apply.

Financial instruments mandatorily measured at FVTPL (trading and non-trading)
Under IFRS 9, trading financial instruments are mandatorily measured at FVTPL as they are held for trading purposes or are part of a managed portfolio with a pattern of short-term profit-taking. Non-trading financial assets are also mandatorily measured at fair value if their contractual cash flow characteristics do not meet the SPPI test or if they are managed together with other financial instruments on a fair value basis.

Trading and non-trading financial instruments mandatorily measured at FVTPL are remeasured at fair value as at the consolidated balance sheet date. Gains and losses realized on disposition and unrealized gains and losses from changes in fair value are included in Non-interest income as Gains (losses) from financial instruments measured/designated at FVTPL, net. Interest income and dividends earned on trading and non-trading securities and dividends and interest expense incurred on securities sold short are included in Interest income and Interest expense, respectively.

Financial instruments designated at FVTPL (fair value option)
Under IFRS 9, financial instruments designated at FVTPL are those that we voluntarily designate at initial recognition as instruments that we will measure at fair value through the consolidated statement of income that would otherwise fall into a different accounting category. As was the case under IAS 39, the

FVO designation, once made, is irrevocable and can only be applied if reliable fair values are available, when doing so eliminates or significantly reduces the measurement inconsistency that would otherwise arise from measuring assets or liabilities on a different basis and if certain OSFI requirements are met. Financial liabilities may also be designated at FVTPL when they are part of a portfolio which is managed on a fair value basis, in accordance with our investment strategy, and are reported internally on that basis. Designation at FVTPL may also be applied to financial liabilities that have one or more embedded derivatives that would otherwise require bifurcation. Unlike IAS 39, however, there is no need to apply FVO to equity instruments as the default accounting is financial instruments mandatorily measured at FVTPL. As was the case under IAS 39, we apply the FVO to certain mortgage commitments.

Gains and losses realized on dispositions and unrealized gains and losses from changes in the fair value of FVO financial instruments are treated in the same manner as financial instruments which are mandatorily measured at FVTPL, except that changes in the fair value of FVO liabilities that are attributable to changes in own credit risk are recognized in OCI. Dividends and interest earned and interest expense incurred on FVO assets and liabilities are included in Interest income and Interest expense, respectively.

Financial assets measured at amortized cost

Under IFRS 9, financial assets measured at amortized cost are debt financial instruments with contractual cash flows that meet the SPPI test and are managed on a "hold to collect" basis. These financial assets are recognized initially at fair value plus or minus direct and incremental transaction costs, and are subsequently measured at amortized cost, using the effective interest rate method, net of an allowance for expected credit losses (ECL).

Consistent with IAS 39, loans measured at amortized cost under IFRS 9 include residential mortgages, personal loans, credit cards and most business and government loans. Most securities classified as HTM under IAS 39 and certain portfolios of treasury securities that were classified as AFS under IAS 39 (but which are managed on a "hold to collect" basis) are also classified as amortized cost under IFRS 9. Also consistent with IAS 39, most deposits with banks, securities purchased under resale agreements, cash collateral on securities borrowed and most customers' liability under acceptances are accounted for at amortized cost under IFRS 9.

Debt financial assets measured at FVOCI

Under IFRS 9, debt financial instruments measured at FVOCI are non-derivative financial assets with contractual cash flows that meet the SPPI test and are managed on a "hold to collect and for sale" basis.

Subsequent measurement of debt instruments classified at FVOCI under IFRS 9 operates in a similar manner to AFS debt securities under IAS 39, except that the ECL impairment model must be applied to these instruments under IFRS 9. As a result, FVOCI debt instruments are measured initially at fair value, plus direct and incremental transaction costs. Subsequent to initial recognition, FVOCI debt instruments are remeasured at FVOCI, with the exception that changes in ECL allowances in addition to related foreign exchange gains or losses are recognized in the consolidated statement of income. Cumulative gains and losses previously recognized in OCI are transferred from AOCI to the consolidated statement of income when the debt instrument is sold. Realized gains and losses on sale, determined on an average cost basis, and changes in ECL allowances, are included in Gains (losses) from debt securities measured at FVOCI and amortized cost, net in the consolidated statement of income. Interest income from FVOCI debt instruments is included in Interest income. FVOCI debt instruments include our treasury securities which are managed on a "hold to collect and for sale" basis.

A debt financial instrument is classified as impaired (stage 3) when one or more events that have a detrimental impact on the estimated future cash flows of that financial instrument have occurred after its initial recognition. Evidence of impairment includes indications that the borrower is experiencing significant financial difficulties, or a default or delinquency has occurred.

Equity financial instruments designated at FVOCI

Under IFRS 9, equity financial instruments are measured at FVTPL unless an irrevocable designation is made to measure them at FVOCI. Gains or losses from changes in the fair value of equity instruments designated at FVOCI, including any related foreign exchange gains or losses, are recognized in OCI. In contrast to AFS equity securities under IAS 39, amounts recognized in OCI will not be subsequently recycled to profit or loss, with the exception of dividends, which are recognized as interest income when received in the consolidated statement of income. Instead, cumulative gains or losses upon derecognition of the equity instrument will be transferred within equity from AOCI to retained earnings and presented in Realized gains (losses) on equity securities designated at FVOCI reclassified to retained earnings in the consolidated statement of changes in equity. Financial assets designated as FVOCI include non-trading equity securities, primarily related to our investment in private companies and limited partnerships.

Impairment of financial assets under IAS 39

We classified a loan as impaired when, in our opinion, there was objective evidence of impairment as a result of one or more loss events that occurred after initial recognition of the loans with a negative impact on the estimated future cash flows of a loan or a portfolio of loans.

Objective evidence of impairment included indications that the borrower was experiencing significant financial difficulties, or a default or delinquency had occurred. Generally, loans on which repayment of principal or payment of interest was contractually 90 days in arrears were automatically considered impaired unless they were fully secured and in the process of collection. Notwithstanding management's assessment of collectability, such loans were considered impaired if payments were 180 days in arrears. Exceptions were as follows:

- Credit card loans were not classified as impaired and were fully written off at the earlier of the notice of bankruptcy, settlement proposal, enlistment of credit counselling services, or when payments were contractually 180 days in arrears.
- Loans guaranteed or insured by a Canadian government (federal or provincial) or a Canadian government agency were classified as impaired only when payments were contractually 365 days in arrears.

In certain circumstances, we could modify a loan for economic or legal reasons related to a borrower's financial difficulties. Once a loan was modified, if management still did not expect full collection of payments under the modified loan terms, the loan was classified as impaired. An impaired loan was measured at its estimated realizable value determined by discounting the expected future cash flows at the loan's original effective interest rate. When a loan or a group of loans had been classified as impaired, interest income was recognized thereafter using the rate of interest used to discount the future cash flows for the purpose of measuring the impairment loss. For credit card loans, interest was accrued only to the extent that there was an expectation of receipt.

A loan was no longer considered impaired when all past due amounts, including interest, had been recovered, and it was determined that the principal and interest were fully collectable in accordance with the original contractual terms or revised market terms of the loan with all criteria for the impaired classification having been remedied. Once a loan was modified and management expected full collection of payments under the modified loan terms, the loan was not considered impaired. No portion of cash received on an impaired loan was recognized in the consolidated statement of income until the loan returned to unimpaired status.

Loans were written off, either partially or in full, against the related allowance for credit losses when we judged that there was no realistic prospect of future recovery in respect of amounts written off. When loans were secured, this was generally after all collateral had been realized or transferred to CIBC, or

in certain circumstances, when the net realizable value of any collateral and other available information suggested that there was no reasonable expectation of further recovery. In subsequent periods, any recoveries of amounts previously written off were credited to the provision for credit losses.

Allowance for credit losses
Under IAS 39, allowance for credit losses consisted of individual and collective components:

Individual allowance
We conducted ongoing credit assessments of the majority of the business and government loan portfolios on an account-by-account basis at each reporting date and we established an allowance for credit losses when there was objective evidence that a loan is impaired.

Collective allowance
Loans were grouped in portfolios of similar credit risk characteristics and impairment was assessed on a collective basis in two circumstances:

(i) Incurred but not yet identified credit losses – for groups of individually assessed loans for which no objective evidence of impairment had been identified on an individual basis:
- A collective allowance was provided for losses which we estimated were inherent in the business and government portfolio as at the reporting date, but which had not yet been specifically identified from an individual assessment of the loan.
- The collective allowance was established with reference to expected loss rates associated with different credit portfolios at different risk levels and the estimated time period for losses that were present but yet to be specifically identified. We also considered estimates of the time periods over which losses that were present would be identified and a provision taken, our view of economic and portfolio trends, and evidence of credit quality improvements or deterioration. The period between a loss occurring and its identification was estimated by management for each identified portfolio. The parameters that affected the collective allowance calculation were updated regularly, based on our experience and that of the market in general.
- Expected loss rates were based on the risk rating of each credit facility and on the probability of default (PD) factors, as well as estimates of loss given default (LGD) associated with each risk rating. The PD factors reflected our historical loss experience and were supplemented by data derived from defaults in the public debt markets. Historical loss experience was adjusted based on current observable data to reflect the effects of current conditions. LGD estimates were based on our experience over past years.

(ii) For groups of loans where each loan was not considered to be individually significant:
- Residential mortgages, credit card loans, personal loans, and certain small business loan portfolios consisted of large numbers of homogeneous balances of relatively small amounts, for which collective allowances were established by reference to historical ratios of write-offs to current accounts and balances in arrears.
- For residential mortgages, personal loans and certain small business loans, this historical loss experience enabled CIBC to determine appropriate PD and LGD parameters, which were used in the calculation of the collective allowance. For credit card loans, the historical loss experience enabled CIBC to calculate roll-rate models in order to determine an allowance amount driven by flows to write-off.
- We also considered estimates of the time periods over which losses that were present would be identified and a provision taken, our view of current and ongoing economic and portfolio trends, and evidence of credit quality improvements or deterioration. The parameters that affected the collective allowance calculation were updated regularly, based on our experience and that of the market in general.

Individual and collective allowances were provided for off-balance sheet credit exposures that were not measured at fair value. These allowances were included in Other liabilities.

AFS debt instruments
An AFS debt instrument was identified as impaired when there was objective observable evidence about our inability to collect the contractual principal or interest.

When an AFS debt instrument was determined to be impaired, an impairment loss was recognized by reclassifying the cumulative unrealized losses in AOCI to the consolidated statement of income. Impairment losses previously recognized in the consolidated statement of income were reversed in the consolidated statement of income if the fair value subsequently increases and the increase could be objectively determined to relate to an event occurring after the impairment loss was recognized.

AFS equity instruments
Objective evidence of impairment for an investment in an AFS equity instrument existed if there had been a significant or prolonged decline in the fair value of the investment below its cost, or if there was information about significant adverse changes in the technological, market, economic, or legal environment in which the issuer operates, or if the issuer was experiencing significant financial difficulty.

When an AFS equity instrument was determined to be impaired, an impairment loss was recognized by reclassifying the cumulative unrealized losses in AOCI to the consolidated statement of income. Impairment losses previously recognized in the consolidated statement of income could not be subsequently reversed. Further decreases in fair value subsequent to the recognition of an impairment loss were recognized directly in the consolidated statement of income, and subsequent increases in fair value were recognized in OCI.

Impairment of financial assets under IFRS 9
Under IFRS 9, ECL allowances are recognized on all financial assets that are debt instruments classified either as amortized cost or FVOCI and for all loan commitments and financial guarantees that are not measured at FVTPL. The application of an ECL model represents a significant change from the incurred loss model under IAS 39. ECL allowances represent credit losses that reflect an unbiased and probability-weighted amount which is determined by evaluating a range of possible outcomes, the time value of money and reasonable and supportable information about past events, current conditions and forecasts of future economic conditions. Forward-looking information is explicitly incorporated into the estimation of ECL allowances, which involves significant judgment (see Note 5 for additional details). In contrast, the incurred loss model under IAS 39 incorporated a single best estimate, the time value of money and information about past events and current conditions.

ECL allowances for loans and acceptances are included in allowance for credit losses on the consolidated balance sheet. ECL allowances for FVOCI debt securities are included as a component of the carrying value of the securities, which are measured at fair value. ECL allowances for other financial assets are included in the carrying value of the instrument. ECL allowances for guarantees and loan commitments are included in other liabilities.

ECL allowances are measured at amounts equal to either: (i) 12-month ECL; or (ii) lifetime ECL for those financial instruments which have experienced a significant increase in credit risk since initial recognition or when there is objective evidence of impairment. In contrast, under the incurred loss model lifetime credit losses were recognized when there was objective evidence of impairment and allowances for incurred but not identified credit losses were also recognized.

The calculation of ECL allowances is based on the expected value of three probability-weighted scenarios to measure the expected cash shortfalls, discounted at the effective interest rate. A cash shortfall is the difference between the contractual cash flows that are due and the cash flows that we expect to receive. The key inputs in the measurement of ECL allowances are as follows:

The PD is an estimate of the likelihood of default over a given time horizon;

The LGD is an estimate of the loss arising in the case where a default occurs at a given time; and

The exposure at default (EAD) is an estimate of the exposure at a future default date.

Lifetime ECL is the expected credit losses that result from all possible default events over the expected life of a financial instrument. 12-month ECL is the portion of lifetime expected credit losses that represent the expected credit losses that result from default events on the financial instrument that are possible within the 12 months after the reporting date.

Due to the inclusion of relative credit deterioration criteria and consideration of forward-looking information, lifetime credit losses are generally recognized earlier under IFRS 9.

Stage migration and significant increase in credit risk

As a result of the requirements above, financial instruments subject to ECL allowances are categorized into three stages.

For performing financial instruments:

Stage 1 is comprised of all performing financial instruments which have not experienced a significant increase in credit risk since initial recognition. We recognize 12 months of ECL for stage 1 financial instruments. In assessing whether credit risk has increased significantly, we compare the risk of a default occurring on the financial instrument as at the reporting date with the risk of a default occurring on the financial instrument as at the date of its initial recognition.

Stage 2 is comprised of all performing financial instruments which have experienced a significant increase in credit risk since initial recognition. We recognize lifetime ECL for stage 2 financial instruments. In subsequent reporting periods, if the credit risk of the financial instrument improves such that there is no longer a significant increase in credit risk since initial recognition, then we revert to recognizing 12 months of ECL as the financial instrument has migrated back to stage 1.

We determine whether a financial instrument has experienced a significant increase in credit risk since its initial recognition on an individual financial instrument basis. Changes in the required ECL allowance, including the impact of financial instruments migrating between stage 1 and stage 2, are recorded in Provision for credit losses in the consolidated statement of income. Significant judgment is required in the application of significant increase in credit risk (see Note 5 for additional details).

Stage 3 financial instruments are those that we have classified as impaired. We recognize lifetime ECL for all stage 3 financial instruments. We classify a financial instrument as impaired when one or more events that have a detrimental impact on the estimated future cash flows of that financial instrument have occurred after its initial recognition. Evidence of impairment includes indications that the borrower is experiencing significant financial difficulties, or a default or delinquency has occurred. Under IFRS 9, all financial instruments on which repayment of principal or payment of interest is contractually 90 days in arrears are automatically considered impaired, except for credit card loans, which are classified as impaired and are fully written off when payments are contractually 180 days in arrears or at the earlier of the notice of bankruptcy, settlement proposal, or enlistment of credit counselling services. The determination of impairment was the same under IAS 39, except that under IAS 39: (i) residential mortgages guaranteed or insured by a Canadian government (federal or provincial) or a Canadian government agency were classified as impaired only when payments were contractually 365 days in arrears; and (ii) residential mortgages guaranteed or insured by a private insurer, or loans that were fully secured and in the process of collection, were classified as impaired only when payments were contractually 180 days in arrears.

A financial instrument is no longer considered impaired when all past due amounts, including interest, have been recovered, and it is determined that the principal and interest are fully collectable in accordance with the original contractual terms or revised market terms of the financial instrument with all criteria for the impaired classification having been remedied.

Financial instruments are written off, either partially or in full, against the related allowance for credit losses when we judge that there is no realistic prospect of future recovery in respect of those amounts. When financial instruments are secured, this is generally after all collateral has been realized or transferred to CIBC, or in certain circumstances, when the net realizable value of any collateral and other available information suggests that there is no reasonable expectation of further recovery. In subsequent periods, any recoveries of amounts previously written off are credited to the provision for credit losses.

Purchased loans

Both purchased performing and purchased credit-impaired loans are initially measured at their acquisition date fair values. As a result of recording these loans at fair value, no allowance for credit losses is recognized in the purchase equation at the acquisition date under either IAS 39 or IFRS 9. Fair value is determined by estimating the principal and interest cash flows expected to be collected and discounting those cash flows at a market rate of interest. At the acquisition date, we classify a loan as performing where we expect timely collection of all amounts in accordance with the original contractual terms of the loan and as credit-impaired where it is probable that we will not be able to collect all contractually required payments.

For purchased performing loans, the acquisition date fair value adjustment on each loan is amortized to interest income over the expected remaining life of the loan using the effective interest rate method under both IAS 39 and IFRS 9. The remaining unamortized amounts relating to those loans are recorded in income in the period that the loan is repaid. Under IFRS 9, ECL allowances are established in Provision for credit losses in the consolidated statement of income immediately after the acquisition date based on classifying each loan in stage 1, since the acquisition date is established as the initial recognition date of purchased performing loans for the purpose of assessing whether a significant increase in credit risk has occurred. Subsequent to the acquisition date, ECL allowances are estimated in a manner consistent with our significant increase in credit risk and impairment policies that we apply to loans that we originate. In contrast, under IAS 39 collective allowances were established after the acquisition date as the purchased loan portfolio turned over and to the extent that the credit quality of the acquired portfolio deteriorated. Under IAS 39, actual individual allowances for credit losses were recorded as they arose subsequent to the acquisition date in a manner that was consistent with our IAS 39 impairment policy for loans that we originated.

For purchased credit-impaired loans under both IAS 39 and IFRS 9, the acquisition date fair value adjustment on each loan consists of management's estimate of the shortfall of principal and interest cash flows expected to be collected and the time value of money. The time value of money component of the fair value adjustment is amortized to interest income over the expected remaining life of the loan using the effective interest rate method. Subsequent to the acquisition date, we regularly re-estimate the expected cash flows for purchased credit-impaired loans. Decreases in the expected cash flows will

result in an increase in our allowances under IFRS 9, which is consistent with the previous IAS 39 requirements. Increases in the expected cash flows will result in a recovery of the ECL allowance under IFRS 9. Under IAS 39, increases in the expected cash flows resulted in a recovery of provision for credit losses and a reduction in our allowance for credit losses, or if no allowance existed, an increase in interest income. ECL allowances for purchased credit-impaired loans are reported in stage 3.

Originated credit impaired financial assets

The accounting for originated credit-impaired financial assets operates in a similar manner to the accounting for purchased credit-impaired loans in that originated credit-impaired assets are initially recognized at fair value with no initial expected credit loss allowance as concerns about the collection of future cash flows is instead reflected in the origination date discount. The time value of money component of the discount is amortized to interest income over the expected remaining life of the financial asset using the effective interest rate method. Changes in expectation regarding the contractual cash flows for loans are recognized immediately in provision for credit losses and for securities are recognized in Gains (losses) from debt securities measured at FVOCI and amortized cost, net.

This accounting generally applies to financial assets that result from debt restructuring arrangements in which a previously impaired financial asset is exchanged for a new financial asset that is either recognized at a fair value that represents a deep discount to par or for which there are significant concerns over the ability to collect the contractual cash flows.

Other significant accounting policies related to the accounting for financial instruments following the application of IFRS 9 are as follows:

Determination of fair value

The transition to IFRS 9 did not impact the definition of fair value, which continues to be defined as the price that would be received to sell an asset or paid to transfer a liability between market participants in an orderly transaction in the principal market at the measurement date under current market conditions (i.e., the exit price). Fair value measurements are categorized into three levels within a fair value hierarchy (Level 1, 2 or 3) based upon the market observability of the valuation inputs used in measuring the fair value. See Note 2 for more details about fair value measurement subsequent to initial recognition by type of financial instrument.

Transaction costs

Transaction costs relating to financial instruments mandatorily measured or designated at FVTPL are expensed as incurred under IFRS 9, consistent with the accounting for transaction costs related to trading and FVO instruments under IAS 39. Transaction costs are amortized over the expected life of the instrument using the effective interest rate method for instruments measured at amortized cost under both IFRS 9 and IAS 39, and debt instruments measured at FVOCI under IFRS 9 and as AFS under IAS 39. For equity instruments designated at FVOCI under IFRS 9 and for equity instruments accounted for at AFS under IAS 39, transaction costs are included in the instrument’s carrying value.

Date of recognition of securities

Under IFRS 9, we continue to account for all securities on our consolidated balance sheet using settlement date accounting, consistent with our accounting under IAS 39.

Effective interest rate

Under IFRS 9, interest income and expense for all financial instruments measured at amortized cost and for debt securities measured at FVOCI is recognized in Interest income and Interest expense using the effective interest rate method, which is similar to the requirements under IAS 39 for loans and receivables and AFS debt securities. The effective interest rate is the rate that exactly discounts estimated future cash receipts or payments through the expected life of the financial instrument to the net carrying value of the financial asset or liability upon initial recognition. When calculating the effective interest rate, we estimate future cash flows considering all contractual terms of the financial instrument, but not future credit losses.

Fees relating to loan origination, including commitment, restructuring and renegotiation fees, are considered an integral part of the yield earned on the loan and are accounted for using the effective interest rate method. Fees received for commitments that are not expected to result in a loan are included in Non-interest income over the commitment period. Loan syndication fees are included in Non-interest income on completion of the syndication arrangement, provided that the yield on the portion of the loan we retain is at least equal to the average yield earned by the other lenders involved in the financing; otherwise, an appropriate portion of the fee is deferred as unearned income and amortized to interest income using the effective interest rate method.

Under IFRS 9, interest income is recognized on stage 1 and stage 2 financial assets measured at amortized cost by applying the effective interest rate to the gross carrying amount of the financial instrument. For stage 3 financial instruments, interest income is recognized using the rate of interest used to discount the estimated future cash flows for the purpose of measuring the impairment loss and applied to the net carrying value of the financial instrument, which is similar to the methodology under IAS 39 applied to impaired loans.

Securitizations and derecognition of financial assets

Securitization of our own assets provides us with an additional source of liquidity. As we generally retain substantially all of the risks and rewards of the transferred assets, assets remain on the consolidated balance sheet and funding from these transactions is accounted for as Deposits – secured borrowing transactions.

Under both IAS 39 and IFRS 9, securitizations to non-consolidated SEs are accounted for as sales, with the related assets being derecognized, only where:

- Our contractual right to receive cash flows from the assets has expired;
- We transfer our contractual rights to receive the cash flows of the financial asset, and have: (i) transferred substantially all the risks and rewards of ownership, or (ii) neither retained nor transferred substantially all the risks and rewards, but have not retained control; or
- The transfer meets the criteria of a qualifying pass-through arrangement.

Derecognition of financial liabilities

Under both IFRS 9 and IAS 39, a financial liability is derecognized when the obligation under the liability is discharged, cancelled or expires. If an existing financial liability is replaced by another liability from the same lender on substantially different terms, or the terms of the existing liability are substantially modified, such an exchange or modification is treated as a derecognition of the original liability and the recognition of a new liability, and the difference in the respective carrying values is recognized in the consolidated statement of income. The repurchase of a debt instrument is considered an extinguishment of that debt instrument even if we intend to resell the instrument in the near term.

Financial guarantees

Financial guarantees are financial contracts that require the issuer to make specified payments 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.

Under both IAS 39 and IFRS 9, financial guarantee contracts issued by CIBC that are not classified as insurance contracts are initially recognized as a liability at fair value, adjusted for transaction costs that are directly attributable to the issuance of the guarantees, which is generally the premium received or receivable on the date the guarantee was given. Subsequently, financial guarantee liabilities are measured at the higher of the initial fair value, less cumulative amortization, and the applicable allowance. Under IFRS 9 the allowance is calculated using the ECL methodology, while under IAS 39 the allowance, if any, represented the present value of any expected payment when a payment under the guarantee had become probable. A financial guarantee that qualifies as a derivative is remeasured at fair value as at each reporting date and reported as Derivative instruments in assets or liabilities, as appropriate.

Mortgage commitments

Mortgage interest rate commitments are extended to our retail clients in contemplation of borrowing to finance the purchase of homes under mortgages to be funded by CIBC in the future. These commitments are usually for periods of up to 120 days and generally entitle the borrower to receive funding at the lower of the interest rate at the time of the commitment and the rate applicable at the funding date. We use financial instruments, such as interest rate derivatives, to economically hedge our exposure to an increase in interest rates. Based on our estimate of the commitments expected to be exercised, a financial liability would be recognized on our consolidated balance sheet, to which we apply the FVO. We also carry the associated economic hedges at fair value on the consolidated balance sheet. Changes in the fair value of the FVO commitment liability and the associated economic hedges are included in gains (losses) from financial instruments measured/designated at FVTPL, net under IFRS 9 and FVO gains (losses), net under IAS 39. In addition, since the fair value of the commitments is priced into the mortgage, the difference between the mortgage amount and its fair value at funding is recognized in the consolidated statement of income to offset the carrying value of the mortgage commitment that is released upon its expiry.

Offsetting of financial assets and financial liabilities

Financial assets and financial liabilities are offset, and the amount presented net, when we have a legally enforceable right to set off the recognized amounts and intend to settle on a net basis or to realize the asset and settle the liability simultaneously.

Acceptances and customers' liability under acceptances

Acceptances constitute a liability of CIBC on negotiable instruments issued to third parties by our customers. We earn a fee for guaranteeing and then making the payment to the third parties. The amounts owed to us by our customers in respect of these guaranteed amounts are reflected in assets as Customers' liability under acceptances.

Securities purchased under resale agreements and obligations related to securities sold under repurchase agreements

Securities purchased under resale agreements are treated as collateralized lending transactions as they represent the purchase of securities affected with a simultaneous agreement to sell them back at a future date at a fixed price, which is generally near term. These transactions are classified and measured at amortized cost under IFRS 9, as they meet the SPPI criteria and are managed under a hold to collect business model. Under IAS 39, they were also generally accounted for at amortized cost unless they were designated under the FVO. Under IFRS 9, an ECL is applied to these instruments, while under IAS 39 an allowance was only provided to the extent there was an impairment. Under both IFRS 9 and IAS 39, interest income is accrued using the effective interest rate method and is included in Interest income – Securities borrowed or purchased under resale agreements in the consolidated statement of income.

Similarly, securities sold under agreements to repurchase are treated as collateralized borrowing transactions with interest expense accrued using the effective interest rate method and are included in Interest expense – Securities lent or sold under repurchase agreements in the consolidated statement of income.

Cash collateral on securities borrowed and securities lent

The right to receive back cash collateral paid and the obligation to return cash collateral received on borrowing and lending of securities, which is generally near term, is recognized as cash collateral on securities borrowed and securities lent, respectively. These transactions are classified and measured at amortized cost as they meet the SPPI criteria and are managed under a hold to collect business model. Under IFRS 9, an ECL is applied to these instruments, while under IAS 39 an allowance was only provided to the extent there was an impairment. Interest income on cash collateral paid and interest expense on cash collateral received together with the security borrowing fees and security lending income are included in Interest income – Securities borrowed or purchased under resale agreements and Interest expense – Securities lent or sold under repurchase agreements, respectively. For securities borrowing and lending transactions where securities are pledged or received as collateral, securities pledged by CIBC remain on the consolidated balance sheet and securities received by CIBC are not recognized on the consolidated balance sheet.

Derivatives

We use derivative instruments for both asset/liability management (ALM) and trading purposes. The derivatives used for ALM purposes allow us to manage financial risks, such as movements in interest and foreign exchange rates, while our derivative trading activities are primarily driven by client trading activities. We may also take proprietary trading positions with the objective of earning income.

Under both IAS 39 and IFRS 9, all derivative instruments are recognized initially, and are measured subsequently, at fair value and are reported as assets where they have a positive fair value and as liabilities where they have a negative fair value, in both cases as derivative instruments. Any realized and unrealized gains or losses on derivatives used for trading purposes were recognized immediately in Trading income (loss) under IAS 39 and are recognized in Gains (losses) from financial instruments measured/designated at FVTPL, net under IFRS 9. The accounting for derivatives used for ALM purposes depends on whether they qualify for hedge accounting as discussed below.

Fair values of exchange-traded derivatives are based on quoted market prices. Fair values of over-the-counter (OTC) derivatives, including OTC derivatives that are centrally cleared, are obtained using valuation techniques, including discounted cash flow models and option pricing models. See Note 12 for further information on the valuation of derivatives.

Derivatives used for ALM purposes that qualify for hedge accounting

As permitted under IFRS 9, we have elected to continue to apply the hedge accounting requirements of IAS 39. However, in 2018, we adopted the new hedge accounting disclosure requirements under the amendments to IFRS 7 "Financial Instruments: Disclosures." Details of the additional disclosures are provided in Note 13.

We apply hedge accounting for derivatives held for ALM purposes that meet specified criteria. There are three types of hedges: fair value, cash flow and hedges of net investments in foreign operations (NIFOs). When hedge accounting is not applied, the change in the fair value of the derivative is recognized in the consolidated statement of income (see "Derivatives used for ALM purposes that are not designated for hedge accounting" below).

In order for derivatives to qualify for hedge accounting, the hedge relationship must be designated and formally documented at its inception in accordance with IAS 39. The particular risk management objective and strategy, the specific asset, liability or cash flow being hedged, as well as how hedge effectiveness is assessed, are documented. Hedge effectiveness requires a high correlation of changes in fair values or cash flows between the hedged and hedging items.

We assess the effectiveness of derivatives in hedging relationships, both at inception and on an ongoing basis. Ineffectiveness results to the extent that the change in the fair value of the hedging derivative differs from the change in the fair value of the hedged risk in the hedged item, or the cumulative change in the fair value of the hedging derivative exceeds the cumulative change in the fair value of expected future cash flows of the hedged item. The amount of ineffectiveness of hedging instruments is recognized immediately in the consolidated statement of income.

Fair value hedges

We designate fair value hedges primarily as part of interest rate risk management strategies that use derivatives to hedge changes in the fair value of financial instruments with fixed interest rates. Changes in fair value attributed to the hedged interest rate risk are accounted for as basis adjustments to the hedged financial instruments and are included in Net interest income. Changes in fair value from the hedging derivatives are also included in Net interest income. Any differences between the two represent hedge ineffectiveness that is included in Net interest income.

Similarly, for hedges of foreign exchange risk, changes in the fair value from the hedging derivatives and non-derivatives are included in FXOTT. Changes in the fair value of the hedged item from the hedged foreign exchange risk are accounted for as basis adjustments and are also included in FXOTT. Any difference between the two represents hedge ineffectiveness.

If the hedging instrument expires or is sold, terminated or exercised, or where the hedge no longer meets the criteria for hedge accounting, the hedge relationship is terminated and the basis adjustment applied to the hedged item is amortized over the remaining term of the hedged item. If the hedged item is derecognized, the unamortized basis adjustment is recognized immediately in the consolidated statement of income.

Cash flow hedges

We designate cash flow hedges as part of interest rate risk management strategies that use derivatives to mitigate our risk from variable cash flows by effectively converting certain variable-rate financial instruments to fixed-rate financial instruments, and as part of foreign exchange rate risk management strategies to hedge forecasted foreign currency denominated cash flows. We also designate cash flow hedges to hedge changes in CIBC's share price in respect of certain cash-settled share-based payment awards.

The effective portion of the change in fair value of the derivative instrument is recognized in OCI until the variability in cash flows being hedged is recognized in the consolidated statement of income in future accounting periods, at which time an appropriate portion of the amount that was in AOCI is reclassified into the consolidated statement of income. The ineffective portion of the change in fair value of the hedging derivative is included in Net interest income, FXOTT, or Non-interest expenses immediately as it arises.

If the hedging instrument expires or is sold, terminated or exercised, or where the hedge no longer meets the criteria for hedge accounting, the hedge relationship is terminated. Upon termination of the hedge relationship, any remaining amount in AOCI remains therein until it is recognized in the consolidated statement of income when the variability in cash flows hedged or the hedged forecast transaction is ultimately recognized in the consolidated statement of income. When the forecasted transaction is no longer expected to occur, the related cumulative gain or loss in AOCI is recognized immediately in the consolidated statement of income.

Hedges of NIFOs with a functional currency other than the Canadian dollar

We may designate NIFO hedges to mitigate the foreign exchange risk on our NIFOs with a functional currency other than the Canadian dollar.

These hedges are accounted for in a similar manner to cash flow hedges. The change in fair value of the hedging instrument relating to the effective portion is recognized in OCI. The change in fair value of the hedging instrument attributable to the forward points and relating to the ineffective portion are recognized immediately in FXOTT. Gains and losses in AOCI are reclassified to the consolidated statement of income upon the disposal or partial disposal of the investment in the foreign operation that involves the loss of control, as explained in the "Foreign currency translation" policy above.

Derivatives used for ALM purposes that are not designated for hedge accounting

The change in fair value of the derivatives not designated as accounting hedges but used to economically hedge FVO assets or liabilities was included in FVO gains (losses), net under IAS 39 and Gains (losses) from financial instruments measured/designated at FVTPL, net under IFRS 9. The change in fair value of other derivatives not designated as accounting hedges but used for other economic hedging purposes is included in FXOTT, Non-interest income, or in the case of economic hedges of cash-settled share-based payment obligations, in compensation expense, as appropriate.

Embedded derivatives

Under both IAS 39 and IFRS 9, derivatives embedded in financial liabilities are accounted for as separate derivatives when their economic characteristics and risks are not closely related to those of the host instrument and the terms of the embedded derivative represent those of a freestanding derivative in situations where the combined instrument is not classified as FVTPL or designated as FVTPL using the FVO. These embedded derivatives, which are classified together with the host instrument on the consolidated balance sheet, are measured at fair value, with changes therein included in the consolidated statement of income. The residual amount of the host liability is accreted to its maturity value through Interest income and Interest expense, respectively, using the effective interest rate method.

Gains at inception on derivatives embedded in financial instruments bifurcated for accounting purposes are not recognized at inception; instead they are recognized over the life of the residual host instrument. Where an embedded derivative is separable from the host instrument but the fair value, as at the acquisition or reporting date, cannot be reliably measured separately or is otherwise not bifurcated, the entire combined contract is measured at FVTPL.

Under IFRS 9, embedded derivatives are no longer bifurcated from financial assets as was the case under IAS 39. Instead the financial asset is classified in its entirety into the appropriate classification at initial recognition through an assessment of the contractual cash flow characteristics of the asset and the business model under which it is managed.

Accumulated other comprehensive income

AOCI is included on the consolidated balance sheet as a separate component of total equity, net of income tax. It includes net unrealized gains and losses on FVOCI debt and equity securities under IFRS 9 (AFS under IAS 39), the effective portion of gains and losses on derivative instruments designated within effective cash flow hedges, unrealized foreign currency translation gains and losses on foreign operations with a functional currency other than the Canadian

dollar net of gains or losses on related hedges, net gains (losses) related to fair value changes of FVO liabilities attributable to changes in own credit risk, and net gains (losses) on post-employment defined benefit plans.

Treasury shares

Where we repurchase our own equity instruments, these instruments are treated as treasury shares and are deducted from equity at their cost with any gain or loss recognized in Contributed surplus or Retained earnings as appropriate. No gain or loss is recognized in the consolidated statement of income on the purchase, sale, issue or cancellation of our own equity instruments. Any difference between the carrying value and the consideration, if reissued, is also included in Contributed surplus.

Liabilities and equity

We classify financial instruments as a liability or equity based on the substance of the contractual arrangement. An instrument is classified as a liability if it is a contractual obligation to deliver cash or another financial asset, or to exchange financial assets or financial liabilities at potentially unfavourable terms. A contract is also classified as a liability if it is a non-derivative and could obligate us to deliver a variable number of our own shares or it is a derivative other than one that can be settled by the delivery of a fixed amount of cash or another financial asset for a fixed number of our own equity instruments. An instrument is classified as equity if it evidences a residual interest in our assets after deducting all liabilities. The components of a compound financial instrument are classified and accounted for separately as assets, liabilities, or equity as appropriate. Incremental costs directly attributable to the issuance of equity instruments are shown in equity, net of income tax.

Land, buildings and equipment

Land is recognized initially at cost and is subsequently measured at cost less any accumulated impairment losses. Buildings, furniture, equipment and leasehold improvements are recognized initially at cost and are subsequently measured at cost less accumulated depreciation and any accumulated impairment losses.

Depreciation commences when the assets are available for use and is recognized on a straight-line basis to depreciate the cost of these assets to their estimated residual value over their estimated useful lives. The estimated useful lives are as follows:

- Buildings – 40 years
- Computer equipment – 3 to 7 years
- Office furniture and other equipment – 4 to 15 years
- Leasehold improvements – over the estimated useful life

Depreciation methods, useful lives and residual values are reviewed at each annual reporting date and are adjusted if appropriate.

Gains and losses on disposal are included in Non-interest income – Other.

We consider a portion of land and a building underlying a finance lease arrangement as investment property since we sub-lease this portion to third parties. Our investment property is recognized initially at cost and is subsequently measured at cost less accumulated depreciation and any accumulated impairment losses. Our investment property is depreciated on a straight-line basis over its estimated useful life, being the term of the lease.

Rental income is included in Non-interest income – Other.

Goodwill, software and other intangible assets

Goodwill represents the excess of the purchase price over the fair value of the net identifiable assets, liabilities and contingent liabilities acquired in business combinations. Identifiable intangible assets are recognized separately from goodwill when they are separable or arise from contractual or other legal rights, and have fair values that can be reliably measured.

Goodwill is not amortized, but is subject to impairment review at least annually or more frequently if there are indicators that the goodwill may be impaired. Refer to the “Impairment of non-financial assets” policy below.

Intangible assets represent software and customer relationships, core deposit intangibles, investment management contracts, and brand names recognized as part of past acquisitions. Intangible assets with definite useful lives are measured at cost less accumulated amortization and accumulated impairment losses. Each intangible asset is assessed for legal, regulatory, contractual, competitive or other factors to determine if the useful life is definite. Intangible assets with definite useful lives are amortized over their estimated useful lives, which are as follows:

- Software – 5 to 10 years
- Contract-based intangibles – 8 to 15 years
- Core deposit and customer relationship intangibles – 3 to 16 years

Intangible assets with indefinite useful lives are measured at cost less any accumulated impairment losses. Indefinite-life intangible assets are tested for impairment at least annually and whenever there is an indication that the asset may be impaired. Refer to the “Impairment of non-financial assets” policy below.

Impairment of non-financial assets

The carrying values of non-financial assets with definite useful lives, including buildings and equipment, investment property, and intangible assets with definite useful lives are reviewed to determine whether there is any indication of impairment. Goodwill and intangible assets with indefinite useful lives are tested for impairment at least annually, and whenever there is an indication that the asset may be impaired. If any such indication of impairment exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss, if any.

For the purpose of reviewing non-financial assets with definite useful lives for impairment, asset groups are reviewed at their lowest level for which identifiable cash inflows are largely independent of cash inflows of other assets or groups of assets. This grouping is referred to as a cash-generating unit (CGU).

Corporate assets do not generate separate cash inflows. Corporate assets are tested for impairment at the minimum collection of CGUs to which the corporate asset can be allocated reasonably and consistently.

The recoverable amount is the greater of fair value less costs to sell and value in use. Value in use is the present value of the future cash flows expected to be derived from the asset or CGU. When the carrying value exceeds its recoverable amount, an impairment loss equal to the difference between the two amounts is recognized in the consolidated statement of income. If an impairment subsequently reverses, the carrying value of the asset is increased to the extent that the carrying value of the underlying assets does not exceed the carrying value that would have been determined, net of

depreciation or amortization, if no impairment had been recognized. Any impairment reversal is recognized in the consolidated statement of income in the period in which it occurs.

Goodwill is assessed for impairment based on the group of CGUs expected to benefit from the synergies of the business combination, and the lowest level at which management monitors the goodwill. Any potential goodwill impairment is identified by comparing the recoverable amount of the CGU grouping to which the goodwill is allocated to its carrying value including the allocated goodwill. If the recoverable amount is less than its carrying value, an impairment loss is recognized in the consolidated statement of income in the period in which it occurs. Impairment losses on goodwill are not subsequently reversed if conditions change.

Income taxes

Income tax comprises current tax and deferred tax. Income tax is recognized in the consolidated statement of income, except to the extent that it relates to items recognized in OCI or directly in equity, in which case it is recognized accordingly.

Current tax is the tax expected to be payable on the taxable profit for the year, calculated using tax rates enacted or substantively enacted as at the reporting date, and any adjustment to tax payable in respect of previous years. Current tax assets and liabilities are offset when CIBC intends to settle on a net basis and the legal right to offset exists.

Deferred tax is recognized on temporary differences between the carrying value of assets and liabilities on the consolidated balance sheet and the corresponding amounts attributed to such assets and liabilities for tax purposes. Deferred tax liabilities are generally recognized for all taxable temporary differences unless the temporary differences relate to our NIFOs and will not reverse in the foreseeable future. Deferred tax assets, other than those arising from our NIFOs, are recognized to the extent that it is probable that future taxable profits will be available against which deductible temporary differences can be utilized. Deferred tax assets arising from our NIFOs are recognized for deductible temporary differences which are expected to reverse in the foreseeable future to the extent that it is probable that future taxable profits will be available against which these deductible temporary differences can be utilized. Deferred tax is not recognized for temporary differences on the initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable income, or for taxable temporary differences arising on the initial recognition of goodwill.

Deferred tax is measured at the tax rates that are expected to be applied to the temporary differences when they reverse, based on the laws that have been enacted or substantively enacted as at the reporting date.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets and liabilities and they relate to income taxes levied by the same tax authority on the same taxable entity or tax reporting group.

We are subject to income tax laws in the various jurisdictions where we operate, and the tax laws in those jurisdictions are potentially subject to different interpretations by us and the relevant taxation authority, which gives rise to uncertainty. For tax positions where there is uncertainty regarding the ultimate determination of the tax impact, including positions which are under audit, dispute or appeal, we recognize provisions to consider this uncertainty based on our best estimate of the amount expected to be paid based on an assessment of the relevant factors.

Pension and other post-employment benefits

We are the sponsor of a number of employee benefit plans. These plans include both defined benefit and defined contribution pension plans, and various other post-employment benefit plans including post-retirement medical and dental benefits.

Defined benefit plans

The cost of pensions and other post-employment benefits earned by employees is actuarially determined separately for each plan using the projected unit credit method and our best estimate of salary escalation, retirement ages of employees, mortality and expected health-care costs. This represents CIBC's defined benefit obligation, which is measured as at the reporting date. The discount rate used to measure the defined benefit obligation is based on the yield of a portfolio of high-quality corporate bonds denominated in the same currency in which the benefits are expected to be paid and with terms to maturity that, on average, match the terms of the defined benefit obligation.

Plan assets are measured at fair value as at the reporting date.

The net defined benefit asset (liability) represents the present value of the defined benefit obligation less the fair value of plan assets. The net defined benefit asset (liability) is included in Other assets and Other liabilities, respectively.

Current service cost reflects the cost of providing post-employment benefits earned by employees in the current period. Current service cost is calculated as the present value of the benefits attributed to the current year of service and is recognized in the consolidated statement of income. The current service cost is calculated using a separate discount rate to reflect the longer duration of future benefit payments associated with the additional year of service to be earned by the plan's active participants.

Past service costs arising from plan amendments or curtailments are recognized in net income in the period in which they arise.

Net interest income or expense comprises interest income on plan assets and interest expense on the defined benefit obligation. Interest income is calculated by applying the discount rate to the plan assets, and interest expense is calculated by applying the discount rate to the defined benefit obligation. Net interest income or expense is recognized in the consolidated statement of income.

Actuarial gains and losses represent changes in the present value of the defined benefit obligation which result from changes in actuarial assumptions and differences between previous actuarial assumptions and actual experience, and from differences between the actual return on plan assets and assumed interest income on plan assets. Net actuarial gains and losses are recognized in OCI in the period in which they arise and are not subject to subsequent reclassification to net income. Cumulative net actuarial gains and losses are included in AOCI.

When the calculation results in a net defined benefit asset, the recognized asset is limited to the present value of economic benefits available in the form of future refunds from the plan or reductions in future contributions to the plan (the asset ceiling). For plans where we do not have an unconditional right to a refund of surplus, we determine the asset ceiling by reference to future economic benefits available in the form of reductions in future contributions to the plan, in which case the present value of economic benefits is calculated giving consideration to minimum funding requirements for future service that apply to the plan. Where a reduction in future contributions to the plan is not currently realizable at the reporting date, we estimate whether we will have the ability to reduce contributions for future service at some point during the life of the plan by taking into account, among other things, expected future returns on plan assets. If it is anticipated that we will not be able to recover the value of the net defined benefit asset, after considering minimum funding requirements for future service, the net defined benefit asset is reduced to the amount of the asset ceiling.

When the payment in the future of minimum funding requirements related to past service would result in a net defined benefit surplus, or an increase in a net defined benefit surplus, the minimum funding requirements are recognized as a liability to the extent that the surplus would not be fully available as a refund or a reduction in future contributions. Any funded status surplus is limited to the present value of future economic benefits available in the form of refunds from the plan or reductions in future contributions to the plan.

Defined contribution plans

Costs for defined contribution plans are recognized during the year in which the service is provided.

Other long-term employee benefits

CIBC sponsors a closed long-term disability plan that is classified as a long-term defined benefit arrangement. As the amount of the long-term disability benefit does not depend on the length of service, the obligation is recognized when an event occurs that gives rise to an obligation to make payments. CIBC also offers other medical and dental benefits to employees while on long-term disability.

The amount of other long-term employee benefits is actuarially calculated using the projected unit credit method. Under this method, the benefit is discounted to determine its present value. The methodology used to determine the discount rate used to value the long-term employee benefit obligation is consistent with that for pension and other post-employment benefit plans. Actuarial gains and losses and past service costs are recognized in the consolidated statement of income in the period in which they arise.

Share-based payments

We provide compensation to certain employees and directors in the form of share-based awards.

Compensation expense for share-based awards is recognized from the service commencement date to the earlier of the contractual vesting date or the employee's retirement eligible date. For grants regularly awarded in the annual incentive compensation cycle (annual incentive grant), the service commencement date is considered to be the start of the fiscal year that precedes the fiscal year in which the grant is made. The service commencement date in respect of special awards granted outside of the annual cycle is the grant date. The amount of compensation expense recognized is based on management's best estimate of the number of share-based awards expected to vest, including estimates of expected forfeitures, which are revised periodically as appropriate. For the annual incentive grant, compensation expense is recognized from the service commencement date based on the estimated fair value of the forthcoming grant with the estimated fair value adjusted to the actual fair value at the grant date.

Under the Restricted Share Award (RSA) plan, where grants are settled in the cash equivalent of common shares, changes in the obligation which arise from fluctuations in the market price of common shares, net of related hedges, are recognized in the consolidated statement of income as compensation expense in proportion to the award recognized. Under the Restricted Stock plan, where restricted stock is granted and settled in common shares, compensation expense is based on the grant date fair value. Compensation expense results in a corresponding increase to contributed surplus. When the restricted stock vests and is released from restriction, the amount recognized in Contributed surplus is credited to common share capital.

Under the Performance Share Unit (PSU) plan, where grants are settled in the cash equivalent of common shares, changes in the obligation which arise from fluctuations in the market price of common shares, and revised estimates of the performance factor, net of related hedges, are recognized in the consolidated statement of income as compensation expense in proportion to the award recognized. The performance factor ranges from 75% to 125% of the initial number of units awarded based on CIBC's performance relative to the other major Canadian banks.

Compensation expense in respect of the Employee Stock Option Plan (ESOP) is based on the grant date fair value. Where the service commencement date precedes the grant date, compensation expense is recognized from the service commencement date based on the estimated fair value of the award at the grant date, with the estimated fair value adjusted to the actual fair value at the grant date. Compensation expense results in a corresponding increase to contributed surplus. If the ESOP award is exercised, the proceeds we receive, together with the amount recognized in Contributed surplus, are credited to common share capital. If the ESOP award expires unexercised, the compensation expense remains in Contributed surplus.

As part of our acquisition of Wellington Financial Fund V LP (Wellington Financial) in the first quarter of 2018, equity-settled awards in the form of exchangeable shares with specific service and non-market performance vesting conditions were issued to selected employees. Compensation expense in respect of the exchangeable shares is based on the grant date fair value, adjusted for changes in the estimated impact of the non-market performance conditions.

Compensation in the form of Deferred Share Units (DSUs) issued pursuant to the Deferred Share Unit Plan, the Deferred Compensation Plan (DCP), and the Directors' Plan, entitle the holder to receive the cash equivalent of a CIBC common share. At the time DSUs are granted, the related expense in respect of the cash compensation that an employee or director would otherwise receive would have been fully recognized. Changes in the obligations which arise from fluctuations in the market price of common shares, net of related hedges, are recognized in the consolidated statement of income as compensation expense for employee DSUs and as Non-interest expense – Other for Directors' DSUs.

Our contributions under the Employee Share Purchase Plan (ESPP) are expensed as incurred.

The impact due to our changes in common share price in respect of cash-settled share-based compensation under the RSA and PSU plans is hedged through the use of derivatives. We designate these derivatives within cash flow hedge accounting relationships. The effective portion of the change in fair value of these derivatives is recognized in OCI and is reclassified into compensation expense, within the consolidated statement of income, over the period that the hedged awards impact the consolidated statement of income. The ineffective portion of the change in fair value of the hedging derivatives is recognized in the consolidated statement of income immediately as it arises.

Provisions and contingent liabilities

Provisions are liabilities of uncertain timing or amount. A provision is recognized when we have a present legal or constructive obligation as a result of a past event, it is probable that an outflow of economic benefits will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation. The provision is recognized as the best estimate of the amount required to settle the obligation at the reporting date, taking into account the risk and uncertainties related to the obligation. Where material, provisions are discounted to reflect the time value of money, and the increase in the obligation due to the passage of time is presented as Interest expense in the consolidated statement of income.

Contingent liabilities are possible obligations that arise from past events whose existence will be confirmed only by the occurrence, or non-occurrence, of one or more uncertain future events not wholly within the control of CIBC, or are present obligations that have arisen from past events but are not recognized because it is not probable that settlement will require the outflow of economic benefits.

Provisions and contingent liabilities are disclosed in the consolidated financial statements.

Earnings per share

We present basic and diluted EPS for our common shares.

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

Diluted EPS is computed by dividing net income for the period attributable to CIBC common shareholders by the weighted-average number of diluted common shares outstanding for the period. Diluted common shares reflect the potential dilutive effect of contingently issuable shares and the exercise of stock options based on the treasury stock method. The number of contingently issuable shares included in diluted EPS is based on the number of shares that would be issuable if the end of the reporting period were the end of the contingency period. For stock options, the treasury stock method determines the number of incremental common shares by assuming that outstanding stock options, whose exercise price is less than the average market price of common shares during the period, are exercised and then reduced by the number of common shares assumed to be repurchased with the exercise proceeds from the assumed exercise of the options. Instruments determined to have an antidilutive effect for the period are excluded from the calculation of diluted EPS.

Fee and commission income

CIBC adopted IFRS 15 "Revenue from Contracts with Customers" (IFRS 15) as at November 1, 2018 in place of prior guidance, including IAS 18 "Revenue" (IAS 18) and IFRIC 13 "Customer Loyalty Programmes" (IFRIC 13). We applied IFRS 15 on a modified retrospective basis. As permitted, we did not restate our prior period comparative consolidated financial statements, which are reported under the prior guidance. The impact of adopting IFRS 15 was not significant (see "Transition impact from adoption of IFRS 15" section below).

The new guidance includes a five-step, principles-based recognition and measurement approach, as well as requirements for accounting for contract costs, and enhanced quantitative and qualitative disclosure requirements. The application of this guidance involves the use of judgment. IFRS 15 excludes from its scope revenue related to financial instruments, lease contracts and insurance contracts. As a result, the majority of our revenue was not impacted by the adoption of this standard, including net interest income, net gains (losses) from financial instruments measured/designated at FVTPL and net gains (losses) from debt securities measured at FVOCI.

Measurement differences resulting from the adoption of IFRS 15 include the upfront expensing of previously deferred mutual fund sales commissions. In addition, the adoption of IFRS 15 has resulted in the revaluation of our self-managed credit card loyalty points liability, which is now subject to both upward and downward remeasurement to reflect the expected cost of redemption as this expectation changes over time. Previously, under IFRIC 13, decreases in the expected cost of redemptions were only recognized as points were redeemed, while increases were recognized immediately.

In addition, the adoption of IFRS 15 has resulted in changes to the presentation of certain revenue and expense items in the consolidated statement of income. Presentation differences include the net presentation of certain expenditures where CIBC is deemed the agent rather than the principal and the gross presentation of certain expenditures where CIBC is deemed the principal rather than the agent. Our prior period comparative consolidated financial statements are reported under the prior guidance, without restatement; however, the measurement and presentation differences in the current period are not significant.

Our accounting policies under both IFRS 15 and IAS 18 are provided below.

Fee and commission income (IAS 18 and IFRIC 13)

The recognition of fee and commission income was determined by the purpose of the fee or commission and the basis of accounting for any associated financial instrument. Income earned on completion of a significant act was recognized when the act was completed. Income earned from the provision of services was recognized as revenue as the services were provided. Income which formed an integral part of the effective interest rate of a financial instrument was recognized as an adjustment to the effective interest rate.

Fee and commission income (IFRS 15)

The recognition of fee and commission income is determined by the purpose of the fee or commission and the terms specified in the contract with the customer. Revenue is recognized when, or as, a performance obligation is satisfied by transferring control of the service to the customer, in the amount of the consideration to which we expect to be entitled. Revenue may therefore be recognized at a point in time upon completion of the service or over time as the services are provided. When revenue is recognized over time, we are generally required to provide the services each period, such that control of the services is transferred evenly to the customer, and we therefore measure our progress towards completion of the service based upon the time elapsed. For contracts where the transaction price includes variable consideration, revenue is only recognized to the extent that it is highly probable that a significant reversal in the amount of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is resolved, which typically occurs by the end of the reporting period. When another party is involved in providing a service to a customer, we determine whether the nature of our performance obligation is that of a principal or an agent. If we control the service before it is transferred to the customer, we are acting as the principal and present revenue separately from the amount paid to the other party; otherwise we are the agent and present revenue net of the amount paid to the other party. Our performance obligations typically have a term of one year or less, with payment received upon satisfaction of the performance obligation or shortly afterwards, and as a result there is no significant financing component and we do not typically capitalize the costs of obtaining contracts with our customers. Income which forms an integral part of the effective interest rate of a financial instrument continues to be recognized as an adjustment to the effective interest rate.

In addition to these general principles, the following specific policies applied under IAS 18 and IFRIC 13 in 2017 and 2018, and IFRS 15 in 2019:

Underwriting and advisory fees are earned on debt and equity securities placements and transaction-based advisory services. Under IAS 18 and IFRS 15, underwriting fees are typically recognized at the point in time when the transaction is completed. Under IAS 18 and IFRS 15, advisory fees are generally recognized as revenue over the period of the engagement as the related services are provided or at the point in time when the transaction is completed.

Deposit and payment fees arise from personal and business deposit accounts and cash management services. Under IAS 18 and IFRS 15, monthly and annual fees are recognized over the period that the related services are provided. Under IAS 18 and IFRS 15, transactional fees are recognized at the point in time the related services are provided.

Credit fees consist of loan syndication fees, loan commitment fees, letter of credit fees, banker's acceptance stamping fees, and securitization fees. Under IAS 18 and IFRS 15, credit fees are generally recognized over the period that the related services are provided, except for loan syndication fees, which are typically recognized at the point in time that the financing placement is completed.

Card fees primarily include interchange income, overlimit fees, cash advance fees, and annual fees. Under IAS 18 and IFRS 15, card fees are recognized at the point in time the related services are provided, except for annual fees, which are recognized over the 12-month period to which they relate. Under IFRIC 13 and IFRS 15, the cost of credit card loyalty points is recognized as a reduction of interchange income when the loyalty points are issued for both self-managed and third-party loyalty points programs. Under IFRIC 13, credit card loyalty points for self-managed loyalty programs were

recognized as deferred revenue when the loyalty points were issued and as revenue when the loyalty points were redeemed. Under IFRS 15, credit card loyalty point liabilities are recognized for self-managed loyalty point programs and are subject to periodic remeasurement to reflect the expected cost of redemption as this expectation changes over time.

Commissions on securities transactions include brokerage commissions for transactions executed on behalf of clients, trailer fees and mutual fund sales commissions. Under IAS 18 and IFRS 15, brokerage commissions and mutual fund sales commissions are generally recognized at the point in time that the related transaction is executed. Under IAS 18 and IFRS 15, trailer fees are typically recognized over time based upon the daily net asset value of the mutual fund units held by clients.

Investment management fees are primarily based on the respective value of the assets under management (AUM) or assets under administration (AUA) and, under IAS 18 and IFRS 15, are recognized over the period that the related services are provided. Under IAS 18 and IFRS 15, investment management fees relating to our asset management and private wealth management business are generally calculated based on point-in-time AUM balances, and investment management fees relating to our retail brokerage business are generally calculated based on point-in-time AUM or AUA balances. Under IAS 18 and IFRS 15, custodial fees are recognized as revenue over the applicable service period, which is generally the contract term.

Mutual fund fees are earned on fund management services and, under IAS 18 and IFRS 15, are recognized over the period that the mutual funds are managed based upon the daily net asset values of the respective mutual funds. In certain circumstances, CIBC may, on a discretionary basis, elect to absorb certain expenses that would otherwise be payable by the mutual funds directly. Under IAS 18 and IFRS 15, these expenses are recognized in Non-interest expenses on the consolidated statement of income.

Transition impact from adoption of IFRS 15

As indicated above, CIBC adopted IFRS 15 as at November 1, 2018 in place of prior guidance, including IAS 18 and IFRIC 13. We applied IFRS 15 on a modified retrospective basis by recognizing a cumulative $6 million after-tax credit from the initial application in opening November 1, 2018 retained earnings. The impact of the initial adoption of IFRS 15 related to the upfront expensing of previously deferred mutual fund sales commissions and the revaluation of our self-managed credit card loyalty points liability.

Transition impact from adoption of IFRS 9

As indicated above, CIBC adopted IFRS 9 in place of IAS 39 as of November 1, 2017. As permitted, we did not restate our prior period comparative consolidated financial statements. Amounts reported relating to periods ended on or before October 31, 2017 are reported under IAS 39 and are therefore not comparable to the information presented for 2018 or 2019. Differences in the carrying amounts of financial instruments that resulted from the adoption of IFRS 9, other than from the voluntary adoption of the "own credit" provisions, have been recognized in our opening November 1, 2017 retained earnings and AOCI as if we had always followed the requirements of IFRS 9. The following table reconciles the carrying amounts under IAS 39 to the carrying amounts under IFRS 9, and the impact, net of tax, on shareholders' equity and total equity due to the transition to IFRS 9 on November 1, 2017:

$ millions	IAS 39 carrying amount as at Oct. 31, 2017	Reclassification	Remeasurements	IFRS 9 carrying amount as at Nov. 1, 2017
ASSETS				
Cash and non-interest-bearing deposits with banks	$ 3,440	$ –	$ –	$ 3,440
Interest-bearing deposits with banks	10,712	–	–	10,712
Securities				
Trading and FVO securities				
Opening balance	50,827			
To securities mandatorily measured and designated at FVTPL		(50,827) (1)		
Closing balance				–
AFS and HTM securities				
Opening balance	42,592			
To debt securities measured at FVOCI		(32,945) (2)		
To equity securities designated at FVOCI		(459) (3)		
To securities mandatorily measured at FVTPL		(1,092) (4)		
To securities measured at amortized cost		(8,096) (5)		
Closing balance				–
Securities mandatorily measured and designated at FVTPL				
Opening balance	–			
From AFS securities		1,092 (4)		
From trading and FVO securities		50,827 (1)		
From loans		12 (4)		
Closing balance				51,931
Debt securities measured at FVOCI				
Opening balance	–			
From AFS securities		32,945 (2)		
Closing balance				32,945
Equity securities designated at FVOCI				
Opening balance	–			
From AFS securities		459 (3)		
Closing balance				459
Securities measured at amortized cost				
Opening balance	–			
From AFS and HTM securities		8,110 (5)		
Closing balance				8,110
	93,419	26	–	93,445
Cash collateral on securities borrowed	5,035	–	–	5,035
Securities purchased under resale agreements	40,383 (6)	–	–	40,383
Loans				
Loans, net of allowance for credit losses	356,734	(375) (4)	(138) (7)	356,221
Loans mandatorily measured at FVTPL	–	363 (4)	–	363
	356,734	(12)	(138)	356,584
Other	55,541	2	25	55,568
Total assets	$ 565,264	$ 16	$ (113)	$ 565,167
LIABILITIES AND EQUITY				
Deposits (8)	$ 439,706	$ –	$ –	$ 439,706
Cash collateral on securities lent	2,024	–	–	2,024
Obligations related to securities sold under repurchase agreements	27,971	–	–	27,971
Subordinated indebtedness	3,209	–	–	3,209
Obligations related to securities sold short	13,713	–	–	13,713
Other	47,404	–	(6)	47,398
Total liabilities	534,027	–	(6)	534,021
Equity				
Preferred shares	1,797	–	–	1,797
Common shares	12,548	–	–	12,548
Contributed surplus	137	–	–	137
Retained earnings	16,101	4	(148)	15,957
Accumulated other comprehensive income				
Opening balance	452			
Reclassification of AFS debt securities to securities measured at amortized cost		16		
Reclassification of AFS equity securities to securities mandatorily measured at FVTPL		(4)		
Recognition of ECL under IFRS 9 on debt securities measured at FVOCI			45	
Closing balance				509
Total shareholders' equity	31,035	16	(103)	30,948
Non-controlling interests	202	–	(4)	198
Total equity	31,237	16	(107)	31,146
	$ 565,264	$ 16	$ (113)	$ 565,167

(1) In our structured credit run-off portfolio, certain securities have been reclassified from FVO to securities mandatorily measured at FVTPL.
(2) Certain AFS debt securities have been reclassified to debt securities measured at FVOCI as the securities met the "solely payment of principal and interest" criteria under IFRS 9 and are managed under a "hold to collect and to sell" business model.
(3) Certain securities have been reclassified from AFS to equity securities designated at FVOCI.
(4) Certain asset-backed securities and asset-backed loans have been reclassified from either AFS or loans to securities or loans mandatorily measured at FVTPL.
(5) Certain debt securities have been reclassified from AFS to securities measured at amortized cost as they met the "solely payment of principal and interest" criteria under IFRS 9 and are held within a business model whose objective is to hold assets to collect the contractual cash flows. The fair value of these securities that were still held at October 31, 2018 was $3,970 million. The change in fair value of these securities that would have been recognized in OCI during the year was a loss of $35 million had these securities continued to be measured at fair value through OCI. In addition, certain HTM securities that are managed under a "hold to collect" business model were reclassified to securities measured at amortized cost.
(6) Includes $1,450 million of certain securities purchased under resale agreements that are measured at FVTPL using the FVO under IAS 39 and as mandatorily measured at FVTPL under IFRS 9.
(7) Comprises measurement adjustments of $69 million related to ECL and $69 million related to the application of the effective interest rate method recognized upon transition to IFRS 9.
(8) Includes FVO deposits of $5,947 million under both IAS 39 and IFRS 9.

The most significant impact was in respect of the transition from an incurred loss model under IAS 39 to an ECL model under IFRS 9 for the determination of allowances for credit losses. For our business and government portfolios, the individually assessed allowances for impaired instruments recognized under IAS 39 have generally been replaced by stage 3 allowances under IFRS 9, while the collective allowances for performing financial instruments have generally been replaced by either stage 1 or stage 2 allowances under IFRS 9. For our retail portfolios, the portion of our collective allowances that relate to impaired financial instruments under IAS 39 have generally been replaced by stage 3 allowances under IFRS 9, while the performing portion of our collective allowances have generally been replaced by either stage 1 or stage 2 allowances under IFRS 9.

The following table reconciles the closing allowance for credit losses in accordance with IAS 39 as at October 31, 2017, to the opening ECL allowance determined in accordance with IFRS 9 as at November 1, 2017:

$ millions, as at	October 31, 2017							November 1, 2017
	IAS 39				IFRS 9			
	Individual allowance	Collective allowance	Total	Remeasurements	Stage 1	Stage 2	Stage 3	Total (1)
Loans								
Residential mortgages	$ 2	$ 201	$ 203	$ 19	$ 28	$ 43	$ 151	$ 222
Personal	7	488	495	(19)	164	202	110	476
Credit card	–	386	386	128	101	413	–	514
Business and government	183	470	653	(65)	234	150	204	588
	$ 192	$ 1,545	$ 1,737	$ 63	$ 527	$ 808	$ 465	$ 1,800
Comprises:								
Loans	$ 192	$ 1,426	$ 1,618	$ 69	$ 474	$ 748	$ 465	$ 1,687
Undrawn credit facilities and other off-balance sheet exposures (2)	–	119	119	(6)	53	60	–	113
Securities								
Debt securities measured at FVOCI (3)	n/a	n/a	n/a	$ 49	$ 14	$ 35	$ –	$ 49

(1) In addition, ECL allowances for other financial assets classified as amortized cost were immaterial as at November 1, 2017.
(2) Included in other liabilities on the consolidated balance sheet.
(3) The ECL allowances for debt securities measured at FVOCI are recognized in AOCI and do not affect the carrying value on our consolidated balance sheet, as these securities are measured at fair value.
n/a Not applicable under IAS 39.

Note 2 Fair value measurement

This note presents the fair values of financial instruments and explains how we determine those values. Note 1, “Basis of preparation and summary of significant accounting policies” sets out the accounting treatment for each measurement category of financial instruments.

Fair value is defined as the price that would be received to sell an asset, or paid to transfer a liability, between market participants in an orderly transaction in the principal market at the measurement date under current market conditions (i.e., the exit price). The determination of fair value requires judgment and is based on market information, where available and appropriate. Fair value measurements are categorized into three levels within a fair value hierarchy (Level 1, 2 or 3) based on the valuation inputs used in measuring the fair value, as outlined below.

- Level 1 – Unadjusted quoted market prices in active markets for identical assets or liabilities we can access at the measurement date. Bid prices, ask prices or prices within the bid and ask, which are the most representative of the fair value, are used as appropriate to measure fair value. Fair value is best evidenced by an independent quoted market price for the same instrument in an active market. An active market is one where transactions are occurring with sufficient frequency and volume to provide quoted prices on an ongoing basis.
- Level 2 – Quoted prices for identical assets or liabilities in markets that are inactive or observable market quotes for similar instruments, or use of valuation techniques where all significant inputs are observable. Inactive markets may be characterized by a significant decline in the volume and level of observed trading activity or through large or erratic bid/offer spreads. In instances where traded markets do not exist or are not considered sufficiently active, we measure fair value using valuation models.
- Level 3 – Non-observable or indicative prices or use of valuation techniques where one or more significant inputs are non-observable.

For a significant portion of our financial instruments, quoted market prices are not available because of the lack of traded markets, and even where such markets do exist, they may not be considered sufficiently active to be used as a final determinant of fair value. When quoted market prices in active markets are not available, we would consider using valuation models. The valuation model and technique we select maximizes the use of observable market inputs to the extent possible and appropriate in order to estimate the price at which an orderly transaction would take place at the measurement date. In an inactive market, we consider all reasonably available information, including any available pricing for similar instruments, recent arm’s-length market transactions, any relevant observable market inputs, indicative dealer or broker quotations, and our own internal model-based estimates.

Valuation adjustments are an integral component of our fair valuation process. We apply judgment in establishing valuation adjustments that take into account various factors that may have an impact on the valuation. Such factors include, but are not limited to, the bid-offer spread, illiquidity due to lack of market depth, parameter uncertainty and other market risk, model risk and credit risk.

Generally, the unit of account for a financial instrument is the individual instrument, and valuation adjustments are applied at an individual instrument level, consistent with that unit of account. In cases where we manage a group of financial assets and liabilities that consist of substantially similar and offsetting risk exposures, the fair value of the group of financial assets and liabilities is measured on the basis of the net open risks.

We apply judgment in determining the most appropriate inputs and the weighting we ascribe to each such input as well as in our selection of valuation methodologies. Regardless of the valuation technique we use, we incorporate assumptions that we believe market participants would make for credit, funding, and liquidity considerations. When the fair value of a financial instrument at inception is determined using a valuation technique that incorporates significant non-observable market inputs, no inception profit or loss (the difference between the determined fair value and the transaction price) is recognized at the time the asset or liability is first recorded. Any gains or losses at inception are deferred and recognized only in future periods over the term of the instruments or when market quotes or data become observable.

We have an ongoing process for evaluating and enhancing our valuation techniques and models. Where enhancements are made, they are applied prospectively, so that fair values reported in prior periods are not recalculated on the new basis. Valuation models used, including analytics for the construction of yield curves and volatility surfaces, are vetted and approved, consistent with our model risk policy.

To ensure that valuations are appropriate, we have established internal guidance on fair value measurement, which is reviewed periodically in recognition of the dynamic nature of markets and the constantly evolving pricing practices in the market. A number of policies and controls are put in place to ensure that the internal guidance on fair value measurement is being applied consistently and appropriately, including independent validation of valuation inputs to external sources such as exchange quotes, broker quotes or other management-approved independent pricing sources. Key model inputs, such as yield curves and volatilities, are independently verified. The results from the independent price validation and any valuation adjustments are reviewed by the Independent Price Verification Committee on a monthly basis. This includes, but is not limited to, reviewing fair value adjustments and methodologies, independent price verification results, limits and valuation uncertainty.

Due to the judgment used in applying a wide variety of acceptable valuation techniques and models, as well as the use of estimates inherent in this process, estimates of fair value for the same or similar assets may differ among financial institutions. The calculation of fair value is based on market conditions as at each consolidated balance sheet date, and may not be reflective of ultimate realizable value.

Methods and assumptions

Financial instruments with fair value equal to carrying value

For financial instruments that are not carried on the consolidated balance sheet at fair value and where we consider the carrying value to be a reasonable approximation of fair value due to their short-term nature and generally negligible credit risk, the fair values disclosed for these financial instruments are assumed to equal their carrying values. These financial instruments are: cash and non-interest-bearing deposits with banks; short-term interest-bearing deposits with banks; cash collateral on securities borrowed; securities purchased under resale agreements; customers' liability under acceptances; cash collateral on securities lent; obligations related to securities sold under repurchase agreements; acceptances; deposits with demand features; and certain other financial assets and liabilities.

Securities

The fair value of debt or equity securities and obligations related to securities sold short is based on quoted bid or ask market prices where available in an active market.

Securities for which quotes in an active market are not available are valued using all reasonably available market information as described below.

The fair value of government issued or guaranteed securities that are not traded in an active market is calculated by applying valuation techniques such as discounted cash flow models using implied yields derived from the prices of actively traded government securities and most recently observable spread differentials.

The fair value of corporate debt securities is determined using the most recently executed transaction prices, and where appropriate, adjusted to the price of these securities obtained from independent dealers, brokers, and third-party multi-contributor consensus pricing sources. When observable price quotations are not available, fair value is determined based on discounted cash flow models using observable discounting curves such as benchmark and government yield curves and spread differentials observed through independent dealers, brokers, and third-party multi-contributor consensus pricing sources.

Asset-backed securities (ABS) and mortgage-backed securities (MBS) not issued or guaranteed by a government are valued using discounted cash flow models making maximum use of market observable inputs, such as broker quotes on identical or similar securities and other pricing information obtained from third-party pricing sources adjusted for the characteristics and the performance of the underlying collateral. Other key inputs used include prepayment and liquidation rates, credit spreads, and discount rates commensurate with the risks involved. These assumptions factor information that is derived from actual transactions, underlying reference asset performance, external market research, and market indices, where appropriate.

Privately issued debt and equity securities, which include certain Community Reinvestment Act equity investments and Federal Home Loan Bank (FHLB) stock, are valued using recent market transactions, where available. Otherwise, fair values are derived from valuation models using a market or income approach. These models consider various factors, including projected cash flows, earnings, revenue or other third-party evidence as available. The fair value of limited partnership investments is based upon net asset values published by third-party fund managers and is adjusted for more recent information, where available and appropriate. The carrying value of Community Reinvestment Act equity investments and FHLB stock approximates fair value.

Loans

The fair value of variable-rate loans and loans for which interest rates are repriced or reset frequently is assumed to be equal to their carrying value. The fair value for fixed-rate loans is estimated using a discounted cash flow calculation that uses market interest rates.

The ultimate fair value of loans disclosed is net of the associated allowance for credit losses. The fair value of loans is not adjusted for the value of any credit derivatives used to manage the credit risk associated with them. The fair value of these credit derivatives is disclosed separately.

Other assets and other liabilities

Other assets and other liabilities mainly comprise accrued interest receivable or payable, brokers' client accounts receivable or payable, precious metals and accounts receivable or payable.

The fair values of other assets and other liabilities are primarily assumed to be at cost or amortized cost as we consider the carrying value to be a reasonable approximation of fair value, except for the fair value of precious metals, which is quoted in an active market. Other assets also include investment in bank-owned life insurance carried at the cash surrender value, which is assumed to be a reasonable approximation of fair value.

Deposits

The fair values of floating-rate deposits and demand deposits are assumed to be equal to their amortized cost. The fair value of fixed-rate deposits is determined by discounting the contractual cash flows using either current market interest rates with similar remaining terms or rates estimated using internal models and broker quotes. The fair value of deposit notes issued to CIBC Capital Trust is determined by reference to the quoted market prices of CIBC Tier 1 Notes issued by CIBC Capital Trust. The fair value of deposit liabilities with embedded optionality includes the fair value of those options. The fair value of equity- and commodity-linked notes includes the fair value of embedded equity and commodity derivatives.

Certain deposits designated at FVTPL are structured notes that have coupons or repayment terms linked to the performance of commodities, debt or equity securities. Fair value of these structured notes is estimated using internally vetted valuation models for the debt and embedded derivative portions of the notes by incorporating market observable prices of the referenced securities or comparable securities, and other inputs such as interest rate yield curves, market volatility levels, foreign exchange rates and changes in our own credit risk, where appropriate. 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. Appropriate market risk valuation adjustments for such inputs are assessed in all such instances.

The fair value of secured borrowings, which comprises liabilities issued by or as a result of activities associated with the securitization of residential mortgages, the Covered Bond Programme, and consolidated securitization vehicles, is based on identical or proxy market observable quoted bond prices or determined by discounting the contractual cash flows using maximum market observable inputs, such as market interest rates, or credit spreads implied by debt instruments of similar credit quality, as appropriate.

Subordinated indebtedness

The fair value of subordinated indebtedness is determined by reference to market prices for the same or similar debt instruments.

Derivative instruments

The fair value of exchange-traded derivatives such as options and futures is based on quoted market prices. OTC derivatives primarily consist of interest rate swaps, foreign exchange forwards, equity and commodity derivatives, interest rate and currency derivatives, and credit derivatives. For such instruments, where quoted market prices or third-party consensus pricing information are not available, valuation techniques are employed to estimate fair value on the

basis of pricing models. Such vetted pricing models incorporate current market measures for interest rates, foreign exchange rates, equity and commodity prices and indices, credit spreads, corresponding market volatility levels, and other market-based pricing factors.

In order to reflect the observed market practice of pricing collateralized and uncollateralized derivatives, our valuation approach uses overnight indexed swap (OIS) curves as the discount rate for valuing collateralized derivatives and uses an estimated market cost of funds curve as the discount rate for valuing uncollateralized derivatives. The impact of valuing uncollateralized derivatives based on an estimated market cost of funds curve reduces the fair value of uncollateralized derivative assets incremental to the reduction in fair value for credit risk already reflected through the credit valuation adjustment (CVA). In contrast, the use of a market cost of funds curve reduces the fair value of uncollateralized derivative liabilities in a manner that generally includes adjustments for our own credit. As market practices continue to evolve in regard to derivative valuation, further adjustments may be required in the future.

In determining the fair value of complex and customized derivatives, such as equity, credit, and commodity derivatives written in reference to indices or baskets of reference, we consider all reasonably available information including any relevant observable market inputs, third-party consensus pricing inputs, indicative dealer and broker quotations, and our own internal model-based estimates, which are vetted and pre-approved in accordance with our model risk policy, and are regularly and periodically calibrated. The model calculates fair value based on inputs specific to the type of contract, which may include stock prices, correlation for multiple assets, interest rates, foreign exchange rates, yield curves, and volatility surfaces. 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. Appropriate parameter uncertainty and market risk valuation adjustments for such inputs and other model risk valuation adjustments are assessed in all such instances.

In addition to reflecting estimated market funding costs in our valuation of uncollateralized derivative receivables, we also consider whether a CVA is required to recognize the risk that any given derivative counterparty may not ultimately be able to fulfill its obligations. The CVA is driven off market-observed credit spreads or proxy credit spreads and our assessment of the net counterparty credit risk exposure. In assessing this exposure, we also take into account credit mitigants such as collateral, master netting arrangements, and settlements through clearing houses. As noted above, the fair value of uncollateralized derivative liabilities based on market cost of funding generally includes adjustments for our own credit.

Mortgage commitments

The fair value of mortgage commitments designated at FVTPL is for fixed-rate residential mortgage commitments and is based on changes in market interest rates for the loans between the commitment and the consolidated balance sheet dates. The valuation model takes into account the expected probability that outstanding commitments will be exercised as well as the length of time the commitment is offered.

Fair value of financial instruments

$ millions, as at October 31		Carrying value						
		Amortized cost	Mandatorily measured at FVTPL	Designated at FVTPL	Fair value through OCI	Total	Fair value	Fair value over (under) carrying value
2019	**Financial assets**							
	Cash and deposits with banks	**$ 16,720**	**$ 639**	**$ –**	**$ –**	**$ 17,359**	**$ 17,359**	**$ –**
	Securities	**20,115**	**53,984**	**413**	**46,798**	**121,310**	**121,453**	**143**
	Cash collateral on securities borrowed	**3,664**	**–**	**–**	**–**	**3,664**	**3,664**	**–**
	Securities purchased under resale agreements	**50,913**	**5,198**	**–**	**–**	**56,111**	**56,111**	**–**
	Loans							
	Residential mortgages	**208,381**	**60**	**–**	**–**	**208,441**	**208,693**	**252**
	Personal	**43,098**	**–**	**–**	**–**	**43,098**	**43,120**	**22**
	Credit card	**12,335**	**–**	**–**	**–**	**12,335**	**12,335**	**–**
	Business and government	**103,885**	**21,182**	**–**	**–**	**125,067**	**125,160**	**93**
	Derivative instruments	**–**	**23,895**	**–**	**–**	**23,895**	**23,895**	**–**
	Customers' liability under acceptances	**9,167**	**–**	**–**	**–**	**9,167**	**9,167**	**–**
	Other assets	**13,829**	**–**	**–**	**–**	**13,829**	**13,829**	**–**
	Financial liabilities							
	Deposits							
	Personal	**$ 176,340**	**$ –**	**$ 1,751**	**$ –**	**$ 178,091**	**$ 178,046**	**$ (45)**
	Business and government	**248,367**	**–**	**9,135**	**–**	**257,502**	**257,872**	**370**
	Bank	**11,224**	**–**	**–**	**–**	**11,224**	**11,224**	**–**
	Secured borrowings	**38,680**	**–**	**215**	**–**	**38,895**	**39,223**	**328**
	Derivative instruments	**–**	**25,113**	**–**	**–**	**25,113**	**25,113**	**–**
	Acceptances	**9,188**	**–**	**–**	**–**	**9,188**	**9,188**	**–**
	Obligations related to securities sold short	**–**	**15,635**	**–**	**–**	**15,635**	**15,635**	**–**
	Cash collateral on securities lent	**1,822**	**–**	**–**	**–**	**1,822**	**1,822**	**–**
	Obligations related to securities sold under repurchase agreements	**51,801**	**–**	**–**	**–**	**51,801**	**51,801**	**–**
	Other liabilities	**14,066**	**114**	**12**	**–**	**14,192**	**14,192**	**–**
	Subordinated indebtedness	**4,684**	**–**	**–**	**–**	**4,684**	**4,925**	**241**

$ millions, as at October 31		Carrying value						
		Amortized cost	Mandatorily measured at FVTPL	Designated at FVTPL	Fair value through OCI	Total	Fair value	Fair value over (under) carrying value
2018	**Financial assets**							
	Cash and deposits with banks	$ 17,637	$ 54	$ –	$ –	$ 17,691	$ 17,691	$ –
	Securities	12,876	52,394	184	36,210	101,664	101,507	(157)
	Cash collateral on securities borrowed	5,488	–	–	–	5,488	5,488	–
	Securities purchased under resale agreements	40,128	3,322	–	–	43,450	43,450	–
	Loans							
	Residential mortgages	207,523	12	–	–	207,535	205,868	(1,667)
	Personal	42,577	–	–	–	42,577	42,559	(18)
	Credit card	12,255	–	–	–	12,255	12,255	–
	Business and government	92,605	16,424	–	–	109,029	108,917	(112)
	Derivative instruments	–	21,431	–	–	21,431	21,431	–
	Customers' liability under acceptances	10,265	–	–	–	10,265	10,265	–
	Other assets	10,230	–	–	–	10,230	10,230	–
	Financial liabilities							
	Deposits							
	Personal	$ 163,113	$ –	$ 766	$ –	$ 163,879	$ 163,642	$ (237)
	Business and government	233,174	–	6,975	–	240,149	240,374	225
	Bank	14,380	–	–	–	14,380	14,380	–
	Secured borrowings	42,481	–	126	–	42,607	42,868	261
	Derivative instruments	–	20,973	–	–	20,973	20,973	–
	Acceptances	10,296	–	–	–	10,296	10,296	–
	Obligations related to securities sold short	–	13,782	–	–	13,782	13,782	–
	Cash collateral on securities lent	2,731	–	–	–	2,731	2,731	–
	Obligations related to securities sold under repurchase agreements	30,840	–	–	–	30,840	30,840	–
	Other liabilities	13,030	95	17	–	13,142	13,142	–
	Subordinated indebtedness	4,080	–	–	–	4,080	4,340	260

Fair value of derivative instruments

$ millions, as at October 31				2019			2018
		Positive	Negative	Net	Positive	Negative	Net
Held for trading							
Interest rate derivatives							
Over-the-counter	– Forward rate agreements	$ 67	$ 241	$ (174)	$ 113	$ 8	$ 105
	– Swap contracts	8,528	7,697	831	4,603	5,901	(1,298)
	– Purchased options	92	–	92	92	–	92
	– Written options	–	128	(128)	–	100	(100)
		8,687	8,066	621	4,808	6,009	(1,201)
Exchange-traded	– Purchased options	4	–	4	1	–	1
		4	–	4	1	–	1
Total interest rate derivatives		8,691	8,066	625	4,809	6,009	(1,200)
Foreign exchange derivatives							
Over-the-counter	– Forward contracts	5,152	5,711	(559)	2,916	2,655	261
	– Swap contracts	2,971	3,330	(359)	4,825	4,979	(154)
	– Purchased options	214	–	214	240	–	240
	– Written options	–	196	(196)	–	233	(233)
		8,337	9,237	(900)	7,981	7,867	114
Total foreign exchange derivatives		8,337	9,237	(900)	7,981	7,867	114
Credit derivatives							
Over-the-counter	– Credit default swap contracts – protection purchased	105	21	84	115	13	102
	– Credit default swap contracts – protection sold	–	107	(107)	3	131	(128)
Total credit derivatives		105	128	(23)	118	144	(26)
Equity derivatives							
Over-the-counter		1,262	2,561	(1,299)	1,951	2,340	(389)
Exchange-traded		2,384	1,825	559	1,659	1,490	169
Total equity derivatives		3,646	4,386	(740)	3,610	3,830	(220)
Precious metal derivatives							
Over-the-counter		287	167	120	63	29	34
Exchange-traded		69	45	24	143	229	(86)
Total precious metal derivatives		356	212	144	206	258	(52)
Other commodity derivatives							
Over-the-counter		1,289	1,517	(228)	2,527	838	1,689
Exchange-traded		314	253	61	67	258	(191)
Total other commodity derivatives		1,603	1,770	(167)	2,594	1,096	1,498
Total held for trading		22,738	23,799	(1,061)	19,318	19,204	114
Held for ALM							
Interest rate derivatives							
Over-the-counter	– Forward rate agreements	2	1	1	–	1	(1)
	– Swap contracts	439	256	183	773	243	530
	– Purchased options	14	–	14	11	–	11
	– Written options	–	–	–	–	8	(8)
Total interest rate derivatives		455	257	198	784	252	532
Foreign exchange derivatives							
Over-the-counter	– Forward contracts	31	28	3	117	7	110
	– Swap contracts	571	1,026	(455)	1,205	1,461	(256)
Total foreign exchange derivatives		602	1,054	(452)	1,322	1,468	(146)
Credit derivatives							
Over-the-counter	– Credit default swap contracts – protection purchased	–	3	(3)	–	3	(3)
Total credit derivatives		–	3	(3)	–	3	(3)
Equity derivatives							
Over-the-counter		100	–	100	7	46	(39)
Total equity derivatives		100	–	100	7	46	(39)
Total held for ALM		1,157	1,314	(157)	2,113	1,769	344
Total fair value		23,895	25,113	(1,218)	21,431	20,973	458
Less: effect of netting		(14,572)	(14,572)	–	(11,789)	(11,789)	–
		$ 9,323	$ 10,541	$ (1,218)	$ 9,642	$ 9,184	$ 458

Assets and liabilities not carried on the consolidated balance sheet at fair value

The table below presents the fair values by level within the fair value hierarchy for those assets and liabilities in which fair value is not assumed to equal the carrying value:

	Level 1		Level 2		Level 3			
	Quoted market price		Valuation technique – observable market inputs		Valuation technique – non-observable market inputs			
$ millions, as at October 31	**2019**	2018	**2019**	2018	**2019**	2018	**Total 2019**	Total 2018
Financial assets								
Amortized cost securities	**$ –**	$ –	**$ 20,242**	$ 12,283	**$ 524**	$ 436	**$ 20,766**	$ 12,719
Loans								
Residential mortgages	**–**	–	**–**	–	**208,633**	205,856	**208,633**	205,856
Personal	**–**	–	**–**	–	**43,120**	42,559	**43,120**	42,559
Credit card	**–**	–	**–**	–	**12,335**	12,255	**12,335**	12,255
Business and government	**–**	–	**–**	–	**103,978**	92,493	**103,978**	92,493
Investment in equity-accounted associates [1]	**9**	–	**–**	–	**76**	101	**85**	101
Financial liabilities								
Deposits								
Personal	**$ –**	$ –	**$ 53,994**	$ 48,116	**$ 1,635**	$ 1,989	**$ 55,629**	$ 50,105
Business and government	**–**	–	**123,144**	120,612	**2,508**	1,489	**125,652**	122,101
Bank	**–**	–	**6,113**	10,003	**–**	–	**6,113**	10,003
Secured borrowings	**–**	–	**36,049**	38,612	**2,959**	4,130	**39,008**	42,742
Subordinated indebtedness	**–**	–	**4,925**	4,340	**–**	–	**4,925**	4,340

(1) See Note 25 for details of our equity-accounted associates.

Financial instruments carried on the consolidated balance sheet at fair value

The table below presents the fair values of financial instruments by level within the fair value hierarchy:

	Level 1		Level 2		Level 3			
	Quoted market price		Valuation technique – observable market inputs		Valuation technique – non-observable market inputs			
$ millions, as at October 31	**2019**	2018	**2019**	2018	**2019**	2018	**Total 2019**	Total 2018
Financial assets								
Deposits with banks	**$ –**	$ –	**$ 639**	$ 54	**$ –**	$ –	**$ 639**	$ 54
Securities mandatorily measured and designated at FVTPL								
Government issued or guaranteed	**2,372**	4,264	**19,306** [1]	16,328 [1]	**–**	–	**21,678**	20,592
Corporate equity	**25,852**	25,140	**684**	208	**7**	6	**26,543**	25,354
Corporate debt	**–**	–	**3,760**	3,675	**23**	26	**3,783**	3,701
Mortgage- and asset-backed	**–**	–	**2,220** [2]	2,612 [2]	**173**	319	**2,393**	2,931
	28,224	29,404	**25,970**	22,823	**203**	351	**54,397**	52,578
Loans mandatorily measured at FVTPL								
Business and government	**–**	–	**20,351**	15,942	**831**	482	**21,182**	16,424
Residential mortgages	**–**	–	**60**	12	**–**	–	**60**	12
	–	–	**20,411**	15,954	**831**	482	**21,242**	16,436
Debt securities measured at FVOCI								
Government issued or guaranteed	**2,369**	2,844	**35,460**	24,763	**–**	–	**37,829**	27,607
Corporate debt	**–**	–	**5,621**	4,543	**–**	–	**5,621**	4,543
Mortgage- and asset-backed	**–**	–	**2,746**	3,498	**–**	–	**2,746**	3,498
	2,369	2,844	**43,827**	32,804	**–**	–	**46,196**	35,648
Equity securities designated at FVOCI								
Corporate equity	**45**	42	**266**	235	**291**	285	**602**	562
	45	42	**266**	235	**291**	285	**602**	562
Securities purchased under resale agreements measured at FVTPL	**–**	–	**5,198**	3,322	**–**	–	**5,198**	3,322
Derivative instruments								
Interest rate	**4**	–	**9,086**	5,593	**56**	–	**9,146**	5,593
Foreign exchange	**–**	–	**8,939**	9,303	**–**	–	**8,939**	9,303
Credit	**–**	–	**1**	3	**104**	115	**105**	118
Equity	**2,383**	1,727	**1,111**	1,783	**252**	107	**3,746**	3,617
Precious metal	**–**	–	**356**	206	**–**	–	**356**	206
Other commodity	**383**	143	**1,220**	2,451	**–**	–	**1,603**	2,594
	2,770	1,870	**20,713**	19,339	**412**	222	**23,895**	21,431
Total financial assets	**$ 33,408**	$ 34,160	**$ 117,024**	$ 94,531	**$ 1,737**	$ 1,340	**$ 152,169**	$ 130,031
Financial liabilities								
Deposits and other liabilities [3]	**$ –**	$ –	**$ (10,626)**	$ (7,556)	**$ (601)**	$ (423)	**$ (11,227)**	$ (7,979)
Obligations related to securities sold short	**(7,258)**	(4,443)	**(8,377)**	(9,339)	**–**	–	**(15,635)**	(13,782)
	(7,258)	(4,443)	**(19,003)**	(16,895)	**(601)**	(423)	**(26,862)**	(21,761)
Derivative instruments								
Interest rate	**–**	–	**(8,322)**	(6,152)	**(1)**	(109)	**(8,323)**	(6,261)
Foreign exchange	**–**	–	**(10,291)**	(9,335)	**–**	–	**(10,291)**	(9,335)
Credit	**–**	–	**(19)**	(16)	**(112)**	(131)	**(131)**	(147)
Equity	**(1,824)**	(1,489)	**(2,407)**	(2,268)	**(155)**	(119)	**(4,386)**	(3,876)
Precious metal	**–**	–	**(212)**	(258)	**–**	–	**(212)**	(258)
Other commodity	**(300)**	(487)	**(1,470)**	(609)	**–**	–	**(1,770)**	(1,096)
	(2,124)	(1,976)	**(22,721)**	(18,638)	**(268)**	(359)	**(25,113)**	(20,973)
Total financial liabilities	**$ (9,382)**	$ (6,419)	**$ (41,724)**	$ (35,533)	**$ (869)**	$ (782)	**$ (51,975)**	$ (42,734)

(1) Includes $56 million related to securities designated at FVTPL (2018: $52 million).
(2) Includes $357 million related to asset-backed securities designated at FVTPL (2018: $132 million).
(3) Comprises deposits designated at FVTPL of $10,458 million (2018: $7,517 million), net bifurcated embedded derivative liabilities of $643 million (2018: $350 million), other liabilities designated at FVTPL of $12 million (2018: $17 million), and other financial liabilities measured at fair value of $114 million (2018: $95 million).

Transfers between levels in the fair value hierarchy are deemed to have occurred at the beginning of the year in which the transfer occurred. Transfers between levels can occur as a result of additional or new information regarding valuation inputs and changes in their observability. During the year, we transferred $25 million of securities mandatorily measured at FVTPL (2018: $211 million) and $431 million of securities sold short (2018: $854 million) from Level 1 to Level 2, and $379 million of securities sold short (2018: nil) from Level 2 to Level 1 due to changes in the observability of the inputs used to value these securities. In addition, transfers between Level 2 and Level 3 were made during 2019 and 2018, primarily due to changes in the observability of certain market volatility inputs that were used in measuring the fair value of our embedded derivatives.

The following table presents the changes in fair value of financial assets and liabilities in Level 3. These instruments are measured at fair value utilizing non-observable market inputs. We often hedge positions with offsetting positions that may be classified in a different level. As a result, the gains and losses for assets and liabilities in the Level 3 category presented in the table below do not reflect the effect of offsetting gains and losses on the related hedging instruments that are classified in Level 1 and Level 2.

				Net gains (losses) included in income (1)							
$ millions, for the year ended October 31	IAS 39 Opening balance	Reclassification upon adoption of IFRS 9 (2)	IFRS 9 Opening balance	Realized (3)	Unrealized (3)(4)	Net unrealized gains (losses) included in OCI (5)	Transfer in to Level 3	Transfer out of Level 3	Purchases/ Issuances	Sales/ Settlements	Closing balance
2019											
Securities mandatorily measured at FVTPL											
Corporate equity	n/a	n/a	$ 6	$ –	$ 1	$ –	$ –	$ –	$ –	$ –	$ 7
Corporate debt	n/a	n/a	26	–	(3)	–	–	–	–	–	23
Mortgage- and asset-backed	n/a	n/a	319	–	1	–	–	–	74	(221)	173
Securities designated at FVTPL											
Asset-backed	n/a	n/a	–	–	–	–	–	–	–	–	–
Loans mandatorily measured at FVTPL											
Business and government	n/a	n/a	482	–	–	(1)	–	–	856	(506)	831
Debt securities measured at FVOCI											
Government issued or guaranteed	n/a	n/a	–	–	–	–	–	–	–	–	–
Corporate debt	n/a	n/a	–	–	–	–	–	–	–	–	–
Mortgage- and asset-backed	n/a	n/a	–	–	–	–	–	–	–	–	–
Equity securities designated at FVOCI											
Corporate equity	n/a	n/a	285	–	–	2	–	–	74	(70)	291
Derivative instruments											
Interest rate	n/a	n/a	–	–	59	–	–	–	2	(5)	56
Credit	n/a	n/a	115	(9)	(2)	–	–	–	–	–	104
Equity	n/a	n/a	107	–	15	–	–	(24)	202	(48)	252
Total assets	n/a	n/a	$ 1,340	$ (9)	$ 71	$ 1	$ –	$ (24)	$ 1,208	$ (850)	$ 1,737
Deposits and other liabilities (6)	n/a	n/a	$ (423)	$ –	$ (113)	$ –	$ (100)	$ 117	$ (288)	$ 206	$ (601)
Derivative instruments											
Interest rate	n/a	n/a	(109)	–	132	–	–	–	–	(24)	(1)
Credit	n/a	n/a	(131)	9	3	–	–	–	–	7	(112)
Equity	n/a	n/a	(119)	–	(89)	–	–	77	(70)	46	(155)
Total liabilities	n/a	n/a	$ (782)	$ 9	$ (67)	$ –	$ (100)	$ 194	$ (358)	$ 235	$ (869)
2018											
Securities mandatorily measured at FVTPL											
Corporate equity	$ 32	$ 10	$ 42	$ 2	$ (3)	$ –	$ –	$ –	$ –	$ (35)	$ 6
Corporate debt	–	–	–	–	–	–	–	–	26	–	26
Mortgage- and asset-backed	3	707	710	3	9	–	12	–	95	(510)	319
Securities designated at FVTPL											
Asset-backed	94	(94)	–	–	–	–	–	–	–	–	–
Loans mandatorily measured at FVTPL											
Business and government	103	363	466	–	(5)	(5)	–	(2)	795	(767)	482
Debt securities measured at FVOCI											
Government issued or guaranteed	–	–	–	–	–	–	479	–	–	(479)	–
Corporate debt	4	–	4	(5)	1	–	–	–	26	(26)	–
Mortgage- and asset-backed	1,674	(1,674)	–	–	–	–	–	–	–	–	–
Equity securities designated at FVOCI											
Corporate equity	289	(10)	279	(3)	(2)	5	–	–	219	(213)	285
Derivative instruments											
Interest rate	28	–	28	–	(20)	–	–	–	–	(8)	–
Credit	130	–	130	(17)	2	–	–	–	–	–	115
Equity	38	–	38	–	(27)	–	12	(1)	109	(24)	107
Total assets	$ 2,395	$ (698)	$ 1,697	$ (20)	$ (45)	$ –	$ 503	$ (3)	$ 1,270	$ (2,062)	$ 1,340
Deposits and other liabilities (6)	$ (369)	$ –	$ (369)	$ –	$ 117	$ –	$ (126)	$ 81	$ (226)	$ 100	$ (423)
Derivative instruments											
Interest rate	(20)	–	(20)	–	(79)	–	–	–	–	(10)	(109)
Credit	(148)	–	(148)	17	(2)	–	–	–	–	2	(131)
Equity	(77)	–	(77)	–	40	–	(71)	46	(147)	90	(119)
Total liabilities	$ (614)	$ –	$ (614)	$ 17	$ 76	$ –	$ (197)	$ 127	$ (373)	$ 182	$ (782)

(1) Cumulative AOCI gains or losses related to equity securities designated at FVOCI are reclassified from AOCI to retained earnings at the time of disposal or derecognition.
(2) Certain reclassifications have been made upon adoption of IFRS 9. See Note 1 for more details about our transition to IFRS 9 on November 1, 2017.
(3) Includes foreign currency gains and losses related to debt securities measured at FVOCI.
(4) Comprises unrealized gains and losses relating to these assets and liabilities held at the end of the reporting year.
(5) Foreign exchange translation on loans mandatorily measured at FVTPL held by foreign operations and denominated in the same currency as the foreign operations is included in OCI.
(6) Includes deposits designated at FVTPL of $135 million (2018: $112 million) and net bifurcated embedded derivative liabilities of $466 million (2018: $311 million).
n/a Not applicable.

Quantitative information about significant non-observable inputs

Valuation techniques using one or more non-observable inputs are used for a number of financial instruments. The following table discloses the valuation techniques and quantitative information about the significant non-observable inputs used in Level 3 financial instruments:

$ millions, as at October 31	2019	Valuation techniques	Key non-observable inputs	Range of inputs Low	High
Securities mandatorily measured at FVTPL					
Corporate equity	$ 7	Valuation multiple	Earnings multiple	15.1	15.1
Corporate debt	23	Discounted cash flow	Discount rate	7.5 %	7.5 %
Mortgage- and asset-backed	173	Discounted cash flow	Credit spread	0.9 %	2.3 %
		Market proxy or direct broker quote	Market proxy or direct broker quote	0.0 %	0.5 %
Equity securities designated at FVOCI					
Corporate equity					
Limited partnerships	225	Adjusted net asset value (1)	Net asset value	n/a	n/a
Private companies	66	Adjusted net asset value (1)	Net asset value	n/a	n/a
		Valuation multiple	Revenue multiple	2.6	2.6
Loans mandatorily measured at FVTPL					
Business and government	831	Discounted cash flow	Credit spread	0.6 %	1.6 %
Derivative instruments					
Interest rate	56	Proprietary model (2)	n/a	n/a	n/a
		Option model	Market volatility	49.7 %	69.4 %
Credit	104	Market proxy or direct broker quote	Market proxy or direct broker quote	0.0 %	20.5 %
Equity	252	Option model	Market volatility	14.0 %	14.0 %
			Market correlation	23.3 %	88.8 %
Total assets	**$ 1,737**				
Deposits and other liabilities	$ (601)	Option model	Market volatility	4.8 %	58.7 %
			Market correlation	(64.0) %	100.0 %
Derivative instruments					
Interest rate	(1)	Proprietary model (2)	n/a	n/a	n/a
		Option model	Market volatility	49.7 %	69.4 %
Credit	(112)	Market proxy or direct broker quote	Market proxy or direct broker quote	0.0 %	20.5 %
Equity	(155)	Option model	Market correlation	7.1 %	98.0 %
Total liabilities	**$ (869)**				

(1) Adjusted net asset value is determined using reported net asset values obtained from the fund manager or general partner of the limited partnership or the limited liability company and may be adjusted for current market levels where appropriate.
(2) Using valuation techniques that we consider to be non-observable.
n/a Not applicable.

Sensitivity of Level 3 financial assets and liabilities

The following section describes the significant non-observable inputs identified in the table above, the interrelationships between those inputs, where applicable, and the change in fair value if changing one or more of the non-observable inputs within a reasonably possible range would impact the fair value significantly.

The fair value of our investments in private companies is based on recent transactions, if available. Otherwise, the fair value is derived from applying applicable valuation multiples to financial indicators such as revenue or earnings. Earnings multiples or revenue multiples represent the ratios of earnings or revenue to enterprise value and are often used as non-observable inputs in the fair value measurement of our investments in private companies. We apply professional judgment in our selection of the multiple from comparable listed companies, which is then further adjusted for company-specific factors. The fair value of private companies is sensitive to changes in the multiple we apply. An increase or a decrease in earnings multiples or revenue multiples generally results in an increase or a decrease, respectively, in the fair value of our investments in private companies. By adjusting the multiple upward and downward within a reasonably possible range, the aggregate fair value of our investments in private companies would increase by $48 million or decrease by $2 million (2018: increase by $11 million or decrease by $8 million).

The fair value of our limited partnerships is determined based on the net asset value provided by the fund managers, adjusted as appropriate. The fair value of limited partnerships is sensitive to changes in the net asset value, and by adjusting the net asset value within a reasonably possible range, the aggregate fair value of our limited partnerships would increase or decrease by $34 million (2018: $23 million).

While our standalone derivatives are recorded as derivative assets or derivative liabilities, our derivatives embedded in our structured note deposit liabilities or deposit liabilities designated at FVTPL are recorded within deposits and other liabilities. The determination of the fair value of certain Level 3 embedded derivatives and certain standalone derivatives requires significant assumptions and judgment to be applied to both the inputs and the valuation techniques employed. These derivatives are sensitive to long-dated market volatility and correlation inputs, which we consider to be non-observable. Market volatility is a measure of the anticipated future variability of a market price and is an important input for pricing options, which are inherent in many of our Level 3 derivatives. A higher market volatility generally results in a higher option price, with all else held constant, due to the higher probability of obtaining a greater return from the option, and results in an increase in the fair value of our Level 3 derivatives. Correlation inputs are used to value those derivatives where the payout is dependent upon more than one market price. For example, the payout of an equity basket option is based upon the performance of a basket of stocks, and the interrelationships between the price movements of those stocks. A positive correlation implies that two inputs tend to change the fair value in the same direction, while a negative correlation implies that two inputs tend to change the fair value in the opposite direction. Changes in market correlation could result in an increase or a decrease in the fair value of our Level 3 derivatives and embedded derivatives. By adjusting the non-observable inputs by reasonably alternative amounts, the fair value of our net Level 3 standalone derivatives and embedded derivatives would increase by $45 million or decrease by $33 million (2018: increase by $67 million or decrease by $68 million).

Financial instruments designated at FVTPL

Financial assets designated at FVTPL include certain debt securities that were designated at FVTPL on the basis of being managed together with derivatives to eliminate or significantly reduce financial risks.

Deposits and other liabilities designated at FVTPL include:

- Certain business and government deposit liabilities and certain secured borrowings that are economically hedged with derivatives and other financial instruments, and certain financial liabilities that have one or more embedded derivatives that significantly modify the cash flows of the host liability but are not bifurcated from the host instrument; and
- Our mortgage commitments to retail clients to provide mortgages at fixed rates that are economically hedged with derivatives and other financial instruments.

The carrying value of our securities designated at FVTPL represents our maximum exposure to credit risk related to these assets designated at FVTPL. The change in fair value attributable to change in credit risk of these assets designated at FVTPL during the year is insignificant (2018: insignificant). The fair value of a liability designated at FVTPL reflects the credit risk relating to that liability. For those liabilities designated at FVTPL for which we believe changes in our credit risk would impact the fair value from the note holders' perspective, the related fair value changes were recognized in OCI. Changes in fair value attributable to changes in our own credit are measured as the difference between: (i) the period-over-period change in the present value of the expected cash flows using a discount curve adjusted for our own credit; and (ii) the period-over-period change in the present value of the same expected cash flows using a discount curve based on the benchmark curve adjusted for our own credit as implied at inception of the liability designated at FVTPL. The pre-tax impact of changes in CIBC's own credit risk on our liabilities designated at FVTPL was gains of $39 million for the year and gains of $21 million cumulatively (2018: losses of $4 million for the year and losses of $18 million cumulatively). A net loss of $32 million, net of hedges, was realized for assets designated at FVTPL and liabilities designated at FVTPL, which is included in the consolidated statement of income under Gains (losses) from financial instruments measured/designated at FVTPL, net (2018: a net gain of $37 million).

The estimated contractual amount payable at maturity of deposits designated at FVTPL, which is based on the par value and the intrinsic value of the applicable embedded derivatives, is $283 million higher (2018: $391 million higher) than its fair value.

Note 3 | Significant transactions

Sale of FirstCaribbean International Bank Limited

On November 8, 2019, we announced that we had entered into a definitive agreement to sell our controlling interest in FirstCaribbean International Bank Limited (CIBC FirstCaribbean) to GNB Financial Group Limited (GNB). Under the terms of the agreement, GNB will acquire 66.73% of CIBC FirstCaribbean's outstanding shares from CIBC for total consideration of approximately US$797 million, subject to closing adjustments to reflect certain changes in CIBC FirstCaribbean's book value prior to closing. The total consideration is comprised of approximately US$200 million in cash and secured financing provided by CIBC for the remainder. CIBC will also provide secured financing to facilitate the purchase of any shares tendered by the minority shareholders of CIBC FirstCaribbean under the take-over bid required by local securities laws. We expect to retain a minority interest in CIBC FirstCaribbean of approximately 24.9% after closing, which will be accounted for as an investment in associate using the equity method. This transaction is subject to regulatory approvals and is expected to close in 2020.

Cumulative foreign exchange translation gains, net of designated hedges, related to our investment in CIBC FirstCaribbean of approximately $280 million after-tax were included in AOCI as at October 31, 2019. Our cumulative foreign exchange translation gains relating to CIBC FirstCaribbean will be reclassified into income upon closing, and remain subject to change from movements in foreign exchange rates until closing.

Due to the valuation implied from the expected sale of our controlling interest in CIBC FirstCaribbean, we recognized a goodwill impairment charge of $135 million in the fourth quarter of 2019 (see Note 8 for additional details).

2019

Acquisition of Cleary Gull

On September 9, 2019, we completed the acquisition of substantially all of the assets and operations of Cleary Gull Inc. (Cleary Gull), a Milwaukee-based boutique investment banking firm specializing in middle-market mergers and acquisitions, private capital placement and debt advisory across the United States. Goodwill and intangible assets of $16 million were recognized as a result of the acquisition. The results of the acquired business have been consolidated from the date of close and are included in our Capital Markets strategic business unit.

Acquisition of Lowenhaupt Global Advisors

On September 1, 2019, we completed the acquisition of substantially all of the assets and operations of Lowenhaupt Global Advisors, LLC (LGA), a wealth advisory firm in St. Louis and New York that provides independent advice on family wealth transfer, taxation, investment portfolio allocation and business structuring. Goodwill and intangible assets of $14 million were recognized as a result of the acquisition. The results of the acquired business have been consolidated from the date of close and are included in our U.S. Commercial Banking and Wealth Management strategic business unit.

Finalization of arrangement with Air Canada

Following the close of Air Canada's acquisition of the Aeroplan loyalty business from Aimia Inc. on January 10, 2019, we will be offering credit cards under Air Canada's new loyalty program, which is expected to launch in 2020. This program will allow CIBC's Aeroplan cardholders to transfer their Aeroplan Miles to Air Canada's new loyalty program.

To secure our participation in Air Canada's new loyalty program for a period of 10 years, we paid Air Canada $200 million plus applicable sales tax, which we recognized as an expense in the first quarter of 2019. In addition, we made a payment of $92 million plus applicable sales tax in the first quarter of 2019 as a prepayment to be applied towards future monthly payments in respect of Aeroplan Miles over a 10-year period.

2018

Acquisition of Wellington Financial

On January 5, 2018, CIBC acquired both the loan assets of Wellington Financial and its management team for a combination of cash, common shares, and exchangeable shares. The acquisition supports the launch of CIBC Innovation Banking, a full service business that delivers strategic advice and funding to North American technology and innovation clients at each stage of their business cycle, and further deepens CIBC's capabilities and complements CIBC Bank USA's existing commercial banking team. Goodwill of $62 million was recognized as a result of the acquisition.

The exchangeable shares issued as part of the consideration for the acquisition are economically equivalent to CIBC common shares, and are subject to various vesting and performance conditions. A portion of the exchangeable shares are treated as equity-settled share-based compensation awards, and are amortized into income over the relevant vesting periods.

The results of the acquired business have been consolidated from the date of close and are included in our Canadian Commercial Banking and Wealth Management SBU.

2017 (finalized in 2018)

Acquisition of PrivateBancorp, Inc.

On June 23, 2017, we completed the acquisition of PrivateBancorp, Inc. (PrivateBancorp) and its subsidiary, The PrivateBank and Trust Company (The PrivateBank, subsequently rebranded as CIBC Bank USA) for total consideration of US$5.0 billion (C$6.6 billion). This acquisition expands our U.S. presence which diversifies earnings and strengthens our platform for long-term growth. The acquisition also creates a platform for CIBC to deliver high-quality middle market commercial and private banking capabilities, which advances our client-focused strategy.

We acquired 100% of the outstanding share capital of PrivateBancorp for a final transaction value of US$61.00 per PrivateBancorp share. During the first quarter of 2018, we finalized the purchase price allocation, and recognized an increase in goodwill of $29 million primarily due to additional information arising from the settlement of the dispute with former PrivateBancorp shareholders who validly exercised their dissent and appraisal rights under Delaware law.

The following summarizes the total purchase consideration of $6.6 billion as of the acquisition date, including the impact of final settlement of obligation to dissenting shareholders in the first quarter of 2018:

$ millions, as at June 23, 2017	
Issuance of CIBC common shares [1]	$ 3,443
Cash [2]	2,770
Estimated obligation payable to dissenting shareholders [3]	327
Issuance of replacement equity-settled awards [4]	72
Total purchase consideration estimated in 2017	$ 6,612
Adjustment to purchase consideration in 2018 [3]	$ 29
Total final purchase consideration	$ 6,641

(1) 32,137,402 CIBC common shares were issued at a price of US$80.95 per share to satisfy the equity component of the merger consideration of 0.4176 of a CIBC common share per PrivateBancorp share.
(2) US$2.1 billion in cash was transferred to satisfy the cash component of the merger consideration of US$27.20 per PrivateBancorp share.
(3) Former PrivateBancorp shareholders who validly exercised their dissent and appraisal rights under Delaware law did not receive the merger consideration and instead filed petitions against PrivateBancorp seeking a payment equal to the "fair value" of their PrivateBancorp shares as determined by a Delaware court following an appraisal proceeding. In such a proceeding, a Delaware court may require a purchaser to pay to the dissenting shareholders an amount more or less than, or the same as, the merger consideration. As at June 23, 2017, CIBC estimated the fair value of the obligation payable to dissenting shareholders using the final transaction value of US$61.00 per PrivateBancorp share. In November 2017, CIBC and the petitioners entered into an agreement to settle the dispute, subject to the court's entry of an order dismissing the consolidated petition. This matter was settled in November 2017 through a combination of $162 million cash and $194 million CIBC common shares, and resulted in an increase in goodwill of $29 million.
(4) Equity-settled share-based awards issued to employees of PrivateBancorp and The PrivateBank consisted of 190,789 replacement restricted shares and 988,544 replacement stock options with a fair value of US$54 million relating to the portion of these awards attributable to pre-acquisition service. The fair values of the restricted shares and the stock options were estimated based on the final transaction value of US$61.00 per PrivateBancorp share.

The following summarizes the fair values of identifiable assets acquired and liabilities assumed at the acquisition date that were reflected in 2017, updated for the impact of final settlement of obligation to dissenting shareholders in the first quarter of 2018:

$ millions, as at June 23, 2017	
Fair values of assets acquired	
Cash and non-interest-bearing deposits with banks	$ 280
Interest-bearing deposits with banks	441
AFS and HTM securities	5,577
Loans [1]	20,642
Other assets	33
Intangible assets [2]	370
Total fair value of identifiable assets acquired	27,343
Fair values of liabilities assumed	
Deposits	24,059
Other liabilities	496
Total fair value of identifiable liabilities assumed	24,555
Fair value of identifiable net assets acquired	2,788
Goodwill	3,853
Total purchase consideration	$ 6,641

(1) The fair value for loans reflects estimates of incurred and expected future credit losses at the acquisition date and interest rate premiums or discounts relative to prevailing market rates. The gross principal amount is $20.9 billion.
(2) Intangible assets include core deposits, customer relationships, and software. Core deposit and customer relationship intangibles arising from the acquisition are amortized on a straight-line basis over estimated useful lives, which range from 3-10 years.

The goodwill recognized of $3.9 billion primarily reflects the expected growth of our combined U.S. Commercial Banking and Wealth Management businesses, the ability to cross sell products between SBUs, and expected synergies from the integration of certain technology and operational platforms. Goodwill is not expected to be deductible for tax purposes.

All results of operations are included in our U.S. Commercial Banking and Wealth Management SBU. In 2017, our acquisition of PrivateBancorp increased our consolidated revenue and net income by $448 million and $96 million, respectively. If our acquisition of PrivateBancorp had occurred on November 1, 2016 it would have increased our 2017 consolidated revenue and net income by $1,228 million and $304 million, respectively. These amounts exclude transaction and integration costs, which are primarily recognized in non-interest expenses and included in Corporate and Other.

Acquisition of Geneva Advisors

On August 31, 2017, we completed the acquisition of Geneva Advisors, LLC (Geneva Advisors), an independent private wealth management firm, for total estimated consideration of US$179 million (C$224 million). This acquisition expands CIBC's private wealth management client base and investment management capabilities in the U.S. The purchase price consisted of $39 million of cash consideration and 1,204,344 CIBC common shares valued at $126 million, plus estimated contingent consideration of $59 million to be paid over the next three years subject to future performance conditions being met. Contingent consideration of up to US$65 million may ultimately be payable dependent upon the level of achievement of future performance conditions.

The following summarizes the fair values of identifiable assets acquired and liabilities assumed at the acquisition date:

$ millions, as at August 31, 2017	
Cash	$ 12
Other assets	2
Intangible assets [1]	102
Other liabilities	(12)
Fair value of identifiable net assets acquired	104
Goodwill [2]	120
Total purchase consideration	$ 224

(1) Intangible assets include customer relationships and contract-based intangibles. The customer relationship intangible asset arising from the acquisition is amortized on a straight-line basis over an estimated useful life of 7 years. Contract-based intangibles arising from the acquisition are amortized on a straight-line basis over estimated useful lives, which range from 5 to 9 years.
(2) Goodwill is expected to be deductible for tax purposes.

During the first quarter of 2018, we finalized the purchase price allocation. No adjustments were recorded as a result of the finalization.

All results of operations are included in our U.S. Commercial Banking and Wealth Management strategic business unit. Transaction and integration costs are included in Corporate and Other.

Note 4 Securities

Securities

$ millions, as at October 31	**2019**	2018
Debt securities measured at FVOCI	**$ 46,196**	$ 35,648
Equity securities designated at FVOCI	**602**	562
Securities measured at amortized cost [1]	**20,115**	12,876
Securities mandatorily measured and designated at FVTPL	**54,397**	52,578
	$ 121,310	$ 101,664

(1) During the year, $110 million of amortized cost debt securities were disposed of shortly before their maturity resulting in a realized loss of less than $1 million (October 31, 2018: nil).

$ millions, as at October 31	Residual term to contractual maturity: Within 1 year		1 to 5 years		5 to 10 years		Over 10 years		No specific maturity		2019 Total		2018 Total	
	Carrying value	**Yield** [1]	**Carrying value**	**Yield** [1]	**Carrying value**	**Yield** [1]	**Carrying value**	**Yield** [1]	**Carrying value**	**Yield** [1]	**Carrying value**	**Yield** [1]	Carrying value	Yield [1]
Debt securities measured at FVOCI														
Securities issued or guaranteed by:														
Canadian federal government	$ 2,452	1.5 %	$ 8,165	1.8 %	$ 234	2.1 %	$ –	– %	$ –	– %	$ 10,851	1.7 %	$ 6,620	2.1 %
Other Canadian governments	1,051	1.7	7,995	1.8	3,225	2.1	–	–	–	–	12,271	1.9	9,249	2.7
U.S. Treasury and agencies	4,128	1.9	5,209	2.1	34	1.6	–	–	–	–	9,371	2.0	7,742	1.8
Other foreign governments	2,227	2.2	2,840	2.4	129	5.2	140	5.6	–	–	5,336	2.5	3,996	2.3
Mortgage-backed securities [2]	–	–	396	1.9	248	2.4	2,055	2.5	–	–	2,699	2.4	3,430	2.5
Asset-backed securities	–	–	–	–	–	–	47	2.4	–	–	47	2.4	68	2.5
Corporate debt	1,007	1.8	4,609	2.5	5	2.4	–	–	–	–	5,621	2.4	4,543	2.3
	$ 10,865		$ 29,214		$ 3,875		$ 2,242		$ –		$ 46,196		$ 35,648	
Equity securities designated at FVOCI														
Corporate public equity	$ –	–	$ –	–	$ –	–	$ –	–	$ 46	n/m	$ 46	n/m	$ 43	n/m
Corporate private equity	–	–	–	–	–	–	–	–	556	n/m	556	n/m	519	n/m
	$ –		$ –		$ –		$ –		$ 602		$ 602		$ 562	
Securities measured at amortized cost														
Securities issued or guaranteed by:														
Canadian federal government	$ –		$ 546		$ 36		$ –		$ –		$ 582		$ 180	
Other Canadian governments	–		2,180		4,514		54		–		6,748		4,872	
U.S. Treasury and agencies	781		5,146		–		–		–		5,927		2,329	
Other foreign governments	234		42		–		384		–		660		693	
Mortgage-backed securities [3]	231		962		987		1,436		–		3,616		3,727	
Asset-backed securities	5		153		305		–		–		463		344	
Corporate debt	280		1,764		75		–		–		2,119		731	
	$ 1,531		$ 10,793		$ 5,917		$ 1,874		$ –		$ 20,115		$ 12,876	
Securities mandatorily measured and designated at FVTPL														
Securities issued or guaranteed by:														
Canadian federal government	$ 1,999		$ 2,463		$ 1,274		$ 1,467		$ –		$ 7,203		$ 10,708	
Other Canadian governments	1,683		1,347		1,049		4,183		–		8,262		8,055	
U.S. Treasury and agencies	121		2,737		1,943		273		–		5,074		905	
Other foreign governments	238		703		164		34		–		1,139		924	
Mortgage-backed securities [4]	95		968		112		–		–		1,175		1,774	
Asset-backed securities	155		451		228		384		–		1,218		1,157	
Corporate debt	789		2,245		571		178		–		3,783		3,701	
	$ 5,080		$ 10,914		$ 5,341		$ 6,519		$ –		$ 27,854		$ 27,224	
Corporate public equity	–		–		–		–		26,523		26,523		25,348 [5]	
Corporate private equity	–		–		–		–		20		20		6 [5]	
	$ –		$ –		$ –		$ –		$ 26,543		$ 26,543		$ 25,354	
Total securities [6]	$ 17,476		$ 50,921		$ 15,133		$ 10,635		$ 27,145		$ 121,310		$ 101,664	

(1) Represents the weighted-average yield, which is determined by applying the weighted average of the yields of individual fixed income securities.
(2) Includes securities backed by mortgages insured by the Canada Mortgage and Housing Corporation (CMHC), with amortized cost of $232 million (2018: $517 million) and fair value of $232 million (2018: $518 million); securities issued by Federal National Mortgage Association (Fannie Mae), with amortized cost of $1,127 million (2018: $1,267 million) and fair value of $1,136 million (2018: $1,238 million); securities issued by Federal Home Loan Mortgage Corporation (Freddie Mac), with amortized cost of $487 million (2018: $689 million) and fair value of $492 million (2018: $673 million); and securities issued by Government National Mortgage Association, a U.S. government corporation (Ginnie Mae), with amortized cost of $841 million (2018: $1,003 million) and fair value of $839 million (2018: $1,001 million).
(3) Includes securities backed by mortgage insured by the Canada Mortgage and Housing Corporation (CMHC) with amortized cost of $858 million (2018: $806 million) and fair value of $859 million (2018: $807 million); securities issued by Fannie Mae, with amortized cost of $1,037 million (2018: $1,275 million) and fair value of $1,048 million (2018: $1,226 million); securities issued by Freddie Mac, with amortized cost of $1,610 million (2018: $1,527 million) and fair value of $1,651 million (2018: $1,461 million); and securities issued by Ginnie Mae, with amortized cost of $98 million (2018: $119 million) and fair value of $99 million (2018: $113 million).
(4) Includes securities backed by mortgages insured by the CMHC of $1,135 million (2018: $1,701 million).
(5) Certain information has been reclassified to conform to the presentation adopted in the current year.
(6) Includes securities denominated in U.S. dollars with carrying value of $54.4 billion (2018: $40.3 billion) and securities denominated in other foreign currencies with carrying value of $1,813 million (2018: $1,799 million).
n/m Not meaningful.

Fair value of debt securities measured and equity securities designated at FVOCI

$ millions, as at October 31	2019				2018			
	Amortized cost [1]	**Gross unrealized gains**	**Gross unrealized losses**	**Fair value**	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value
Securities issued or guaranteed by:								
Canadian federal government	$ 10,842	$ 12	$ (3)	$ 10,851	$ 6,608	$ 15	$ (3)	$ 6,620
Other Canadian governments	12,252	22	(3)	12,271	9,220	31	(2)	9,249
U.S. Treasury and agencies	9,353	25	(7)	9,371	7,824	7	(89)	7,742
Other foreign governments	5,318	25	(7)	5,336	3,997	16	(17)	3,996
Mortgage-backed securities	2,688	15	(4)	2,699	3,476	5	(51)	3,430
Asset-backed securities	47	–	–	47	68	–	–	68
Corporate debt	5,608	16	(3)	5,621	4,567	2	(26)	4,543
	46,108	115	(27)	46,196	35,760	76	(188)	35,648
Corporate public equity [2]	40	15	(9)	46	34	14	(5)	43
Corporate private equity	493	85	(22)	556	434	100	(15)	519
	533	100	(31)	602	468	114	(20)	562
	$ 46,641	$ 215	$ (58)	$ 46,798	$ 36,228	$ 190	$ (208)	$ 36,210

(1) Net of allowance for credit losses for debt securities measured at FVOCI of $23 million (2018: $23 million).
(2) Includes restricted stock.

Fair value of equity securities designated at FVOCI that were disposed of during the year was $20 million (2018: $35 million). Net realized cumulative after-tax gains of $18 million for the year (2018: $38 million) resulting from dispositions of equity securities designated at FVOCI and return on capital distributions from limited partnerships designated at FVOCI were reclassified from AOCI to retained earnings.

Dividend income recognized for the year ended October 31, 2019 on equity securities designated at FVOCI that were still held as at October 31, 2019 was $9 million (2018: $5 million). No dividend income was recognized on equity securities designated at FVOCI that were disposed of during the year (2018: nil).

The table below presents profit or loss recognized on FVOCI securities (2017: AFS securities):

$ millions, for the year ended October 31	**2019**	2018	2017
Realized gains	**$ 40**	$ 56	$ 178
Realized losses	**(2)**	(13)	(25)
Provision for credit losses on debt securities	**(3)**	(78)	n/a
Impairment write-downs			
Equity securities	**n/a**	n/a	(10)
	$ 35	$ (35)	$ 143

n/a Not applicable.

Allowance for credit losses

The following table provides a reconciliation of the opening balance to the closing balance of the ECL allowance under IFRS 9 for debt securities measured at FVOCI:

		Stage 1	**Stage 2**	**Stage 3**	
$ millions, as at or for the year ended October 31		**Collective provision 12-month ECL performing**	**Collective provision lifetime ECL performing**	**Collective and individual provision lifetime ECL credit-impaired**	**Total**
2019	**Debt securities measured at FVOCI**				
	Balance at beginning of year	**$ 15**	**$ 3**	**$ 5**	**$ 23**
	Provision for (reversal of) credit losses (1)	**–**	**–**	**4**	**4**
	Write-offs	**–**	**–**	**(4)**	**(4)**
	Other	**(1)**	**–**	**1**	**–**
	Balance at end of year	**$ 14**	**$ 3**	**$ 6**	**$ 23**
2018	**Debt securities measured at FVOCI**				
	Balance at beginning of year	$ 14	$ 35	$ –	$ 49
	Provision for (reversal of) credit losses (1)	1	(32)	109	78
	Write-offs	–	–	(5)	(5)
	Other	–	–	(99) (2)	(99)
	Balance at end of year	$ 15	$ 3	$ 5	$ 23

(1) Included in the gains (losses) from debt securities measured at FVOCI and amortized cost, net on our consolidated statement of income.
(2) Includes ECL of $99 million relating to Barbados debt securities that were derecognized in the fourth quarter of 2018 as a result of a debt restructuring agreement completed with the Government of Barbados.

Barbados debt restructuring

As a result of a comprehensive debt restructuring agreement completed with the Government of Barbados in the fourth quarter of 2018, which impacts Barbados dollar-denominated debt instruments and excludes U.S. dollar-denominated debt, we derecognized debt securities measured at FVOCI with a par value of $467 million and expected credit losses of $99 million, and derecognized loans measured at amortized cost with a par value of $116 million and expected credit losses of $48 million. In exchange for the securities and loans that were derecognized, we recognized longer-dated securities with a par value of $522 million as originated credit-impaired amortized cost securities at a carrying value equal to the estimated fair value of $375 million with no initial allowance for expected credit losses as risk of future losses was reflected in the acquisition date discount, and recognized shorter-dated securities with a par value of $61 million as stage 1 amortized cost securities with expected credit losses of $1 million.

Note 5 Loans[1][2]

$ millions, as at October 31	2019					2018				
	Gross amount	**Stage 3 allowance**	**Stages 1 and 2 allowance**	**Total allowance** [3]	**Net total**	Gross amount	Stage 3 allowance	Stages 1 and 2 allowance	Total allowance	Net total
Residential mortgages [4]	**$ 208,652**	**$ 140**	**$ 71**	**$ 211**	**$ 208,441**	$ 207,749	$ 143	$ 71	$ 214	$ 207,535
Personal	**43,651**	**128**	**425**	**553**	**43,098**	43,058	109	372	481	42,577
Credit card	**12,755**	**–**	**420**	**420**	**12,335**	12,673	–	418	418	12,255
Business and government [4]	**125,798**	**376**	**355**	**731**	**125,067**	109,555	230	296	526	109,029
	$ 390,856	**$ 644**	**$ 1,271**	**$ 1,915**	**$ 388,941**	$ 373,035	$ 482	$ 1,157	$ 1,639	$ 371,396

(1) Loans are net of unearned income of $469 million (2018: $421 million).
(2) Includes gross loans of $69.5 billion (2018: $61.0 billion) denominated in U.S. dollars and $6.7 billion (2018: $4.8 billion) denominated in other foreign currencies.
(3) Includes ECL allowances for customers' liability under acceptances.
(4) Includes $60 million of residential mortgages (2018: $12 million) and $21,182 million of business and government loans (2018: $16,424 million) that are measured at FVTPL.

Allowance for credit losses

The following table provides a reconciliation of the opening balance to the closing balance of the ECL allowance under IFRS 9:

$ millions, as at or for the year ended October 31	Stage 1	Stage 2	Stage 3	2019
	Collective provision 12-month ECL performing	Collective provision lifetime ECL performing	Collective and individual provision lifetime ECL credit-impaired [(1)]	Total
Residential mortgages				
Balance at beginning of year	$ 27	$ 44	$ 143	$ 214
Originations net of repayments and other derecognitions	4	(11)	(23)	(30)
Changes in model	(2)	(6)	(5)	(13)
Net remeasurement [(2)]	(41)	32	94	85
Transfers [(2)]				
– to 12-month ECL	42	(30)	(12)	–
– to lifetime ECL performing	(3)	22	(19)	–
– to lifetime ECL credit-impaired	–	(7)	7	–
Provision for (reversal of) credit losses [(3)]	–	–	42	42
Write-offs [(4)]	–	–	(29)	(29)
Recoveries	–	–	2	2
Interest income on impaired loans	–	–	(17)	(17)
Foreign exchange and other	1	(1)	(1)	(1)
Balance at end of year	$ 28	$ 43	$ 140	$ 211
Personal				
Balance at beginning of year	$ 190	$ 199	$ 109	$ 498
Originations net of repayments and other derecognitions	45	(50)	–	(5)
Changes in model	(14)	30	–	16
Net remeasurement [(2)]	(194)	283	309	398
Transfers [(2)]				
– to 12-month ECL	183	(179)	(4)	–
– to lifetime ECL performing	(37)	51	(14)	–
– to lifetime ECL credit-impaired	–	(63)	63	–
Provision for (reversal of) credit losses [(3)]	(17)	72	354	409
Write-offs [(4)]	–	–	(395)	(395)
Recoveries	–	–	62	62
Interest income on impaired loans	–	–	(5)	(5)
Foreign exchange and other	1	–	3	4
Balance at end of year	$ 174	$ 271	$ 128	$ 573
Credit card				
Balance at beginning of year	$ 102	$ 370	$ –	$ 472
Originations net of repayments and other derecognitions	–	(50)	–	(50)
Changes in model	36	(48)	–	(12)
Net remeasurement [(2)]	(190)	477	184	471
Transfers [(2)]				
– to 12-month ECL	229	(229)	–	–
– to lifetime ECL performing	(33)	33	–	–
– to lifetime ECL credit-impaired	–	(215)	215	–
Provision for (reversal of) credit losses [(3)]	42	(32)	399	409
Write-offs [(4)]	–	–	(516)	(516)
Recoveries	–	–	117	117
Interest income on impaired loans	–	–	–	–
Foreign exchange and other	1	2	–	3
Balance at end of year	$ 145	$ 340	$ –	$ 485
Business and government				
Balance at beginning of year	$ 180	$ 147	$ 230	$ 557
Originations net of repayments and other derecognitions	32	(19)	(21)	(8)
Changes in model	–	1	3	4
Net remeasurement [(2)]	(17)	97	350	430
Transfers [(2)]				
– to 12-month ECL	71	(64)	(7)	–
– to lifetime ECL performing	(21)	25	(4)	–
– to lifetime ECL credit-impaired	(2)	(29)	31	–
Provision for (reversal of) credit losses [(3)]	63	11	352	426
Write-offs [(4)]	–	–	(190)	(190)
Recoveries	–	–	13	13
Interest income on impaired loans	–	–	(18)	(18)
Foreign exchange and other	(4)	–	(9)	(13)
Balance at end of year	$ 239	$ 158	$ 378	$ 775
Total ECL allowance [(5)]	$ 586	$ 812	$ 646	$ 2,044
Comprises:				
Loans	$ 526	$ 745	$ 644	$ 1,915
Undrawn credit facilities and other off-balance sheet exposures [(6)]	60	67	2	129

(1) Includes the ECL allowance for purchased credit-impaired loans from the acquisition of The PrivateBank.
(2) Transfers represent the amount of the ECL allowance at the beginning of the quarter in which the loan migration occurred. Net remeasurement represents the current period change in ECL allowances for transfers, net write-offs, changes in forecasts of forward-looking information, parameter updates, and partial repayments in the period.
(3) Provision for (reversal of) credit losses for loans and undrawn credit facilities and other off-balance sheet exposures is presented as Provision for (reversal of) credit losses on our consolidated statement of income.
(4) We generally continue to pursue collection on the amounts that were written off. The degree of collection efforts varies from one jurisdiction to another, depending on the local regulations and original agreements with customers.
(5) See Note 4 for the ECL allowance on debt securities measured at FVOCI. The ECL allowances for other financial assets classified at amortized cost were immaterial as at October 31, 2019 and were excluded from the table above. Other financial assets classified at amortized cost are presented on our consolidated balance sheet net of ECL allowances.
(6) Included in Other liabilities on our consolidated balance sheet.

$ millions, as at or for the year ended October 31				2018
	Stage 1	Stage 2	Stage 3	
	Collective provision 12-month ECL performing	Collective provision lifetime ECL performing	Collective and individual provision lifetime ECL credit-impaired (1)	Total
Residential mortgages				
Balance at beginning of year	$ 28	$ 43	$ 151	$ 222
Originations net of repayments and other derecognitions	7	(6)	(13)	(12)
Changes in model	(2)	1	22	21
Net remeasurement (2)	(25)	13	60	48
Transfers (2)				
– to 12-month ECL	20	(16)	(4)	–
– to lifetime ECL performing	(1)	9	(8)	–
– to lifetime ECL credit-impaired	–	(2)	2	–
Provision for (reversal of) credit losses (3)	(1)	(1)	59	57
Write-offs (4)	–	–	(54)	(54)
Recoveries	–	–	–	–
Interest income on impaired loans	–	–	(10)	(10)
Foreign exchange and other	–	2	(3)	(1)
Balance at end of year	$ 27	$ 44	$ 143	$ 214
Personal				
Balance at beginning of year	$ 164	$ 202	$ 110	$ 476
Originations net of repayments and other derecognitions	34	(22)	(5)	7
Changes in model	(2)	–	–	(2)
Net remeasurement (2)	(116)	148	299	331
Transfers (2)				
– to 12-month ECL	151	(148)	(3)	–
– to lifetime ECL performing	(40)	49	(9)	–
– to lifetime ECL credit-impaired	–	(31)	31	–
Provision for (reversal of) credit losses (3)	27	(4)	313	336
Write-offs (4)	–	–	(368)	(368)
Recoveries	–	–	58	58
Interest income on impaired loans	–	–	(3)	(3)
Foreign exchange and other	(1)	1	(1)	(1)
Balance at end of year	$ 190	$ 199	$ 109	$ 498
Credit card				
Balance at beginning of year	$ 101	$ 413	$ –	$ 514
Originations net of repayments and other derecognitions	–	(24)	–	(24)
Changes in model	–	2	–	2
Net remeasurement (2)	(143)	370	145	372
Transfers (2)				
– to 12-month ECL	179	(179)	–	–
– to lifetime ECL performing	(35)	35	–	–
– to lifetime ECL credit-impaired	–	(247)	247	–
Provision for (reversal of) credit losses (3)	1	(43)	392	350
Write-offs (4)	–	–	(512)	(512)
Recoveries	–	–	120	120
Interest income on impaired loans	–	–	–	–
Foreign exchange and other	–	–	–	–
Balance at end of year	$ 102	$ 370	$ –	$ 472
Business and government				
Balance at beginning of year	$ 234	$ 150	$ 204	$ 588
Originations net of repayments and other derecognitions	19	(10)	(15)	(6)
Changes in model	(11)	(7)	1	(17)
Net remeasurement (2)	(109)	72	187	150
Transfers (2)				
– to 12-month ECL	66	(60)	(6)	–
– to lifetime ECL performing	(21)	25	(4)	–
– to lifetime ECL credit-impaired	(1)	(24)	25	–
Provision for (reversal of) credit losses (3)	(57)	(4)	188	127
Write-offs (4)	–	–	(116)	(116)
Recoveries	–	–	12	12
Interest income on impaired loans	–	–	(10)	(10)
Foreign exchange and other	3	1	(48) (5)	(44)
Balance at end of year	$ 180	$ 147	$ 230	$ 557
Total ECL allowance (6)	$ 499	$ 760	$ 482	$ 1,741
Comprises:				
Loans	$ 450	$ 707	$ 482	$ 1,639
Undrawn credit facilities and other off-balance sheet exposures (7)	49	53	–	102

(1) Includes the ECL allowance for purchased credit-impaired loans from the acquisition of The PrivateBank.
(2) Transfers represent the amount of the ECL allowance at the beginning of the quarter in which the loan migration occurred. Net remeasurement represents the current period change in ECL allowances for transfers, net write-offs, changes in forecasts of forward-looking information, parameter updates, and partial repayments in the period.
(3) Provision for (reversal of) credit losses for loans and undrawn credit facilities and other off-balance sheet exposures is presented as Provision for (reversal of) credit losses on our consolidated statement of income.
(4) We generally continue to pursue collection on the amounts that were written off. The degree of collection efforts varies from one jurisdiction to another, depending on the local regulations and original agreements with customers.
(5) Includes ECL of $48 million relating to Barbados loans that were derecognized in the fourth quarter of 2018 as a result of a debt restructuring agreement completed with the Government of Barbados.
(6) See Note 4 for the ECL allowance on debt securities measured at FVOCI. The ECL allowances for other financial assets classified at amortized cost were immaterial as at October 31, 2018 and were excluded from the table above. Other financial assets classified at amortized cost are presented on our consolidated balance sheet net of ECL allowances.
(7) Included in Other liabilities on our consolidated balance sheet.

Inputs, assumptions and model techniques

Our ECL allowances are estimated using complex models that incorporate inputs, assumptions and model techniques that involve a high degree of management judgment. In particular, the following ECL elements are subject to a high level of judgment that can have a significant impact on the level of ECL allowances provided:

- Determining when a significant increase in credit risk of a loan has occurred;
- Measuring both 12-month and lifetime credit losses; and

- Forecasting forward-looking information for multiple scenarios and determining the probability weighting of the scenarios.

In addition, the interrelationship between these elements is also subject to a high degree of judgment which can also have a significant impact on the level of ECL recognized.

Determining when a significant increase in credit risk has occurred

The determination of whether a loan has experienced a significant increase in credit risk has a significant impact on the level of ECL allowance as loans that are in stage 1 are measured at 12-month ECL, while loans in stage 2 are measured at lifetime ECL. Migration of loans between stage 1 and stage 2 can cause significant volatility in the amount of the recognized ECL allowances and the provision for credit losses in a particular period.

For the majority of our retail loan portfolios, we determine a significant increase in credit risk based on relative changes in the loan's lifetime PD since its initial recognition. The PDs used for this purpose are the expected value of our upside, downside and base case lifetime PDs. Significant judgment is involved in determining the upside, downside and base case lifetime PDs through the incorporation of forward-looking information into long run PDs, in determining the probability weightings of the scenarios, and in determining the relative change in PDs that are indicative of a significant increase in credit risk for our various retail products. Increases in the expected PDs or decreases in the thresholds for changes in PDs that are indicative of a significant increase in credit risk can cause significant migration of loans from stage 1 to stage 2, which in turn can cause a significant increase in the amount of ECL allowances recognized. In contrast, decreases in the expected PDs or increases in the thresholds for changes in PDs that are indicative of a significant increase in credit risk can cause significant migration of loans from stage 2 to stage 1.

For the majority of our business and government loan portfolios, we determine a significant increase in credit risk based on relative changes in internal risk ratings since initial recognition. Significant judgment is involved in the determination of the internal risk ratings. Deterioration or improvement in the risk ratings or adjustments to the risk rating downgrade thresholds used to determine a significant increase in credit risk can cause significant migration of loans and securities between stage 1 and stage 2, which in turn can have a significant impact on the amount of ECL allowances recognized.

While potentially significant to the level of ECL allowances recognized, the thresholds for changes in PDs that are indicative of a significant increase in credit risk for our retail portfolios and the risk rating downgrade thresholds used to determine a significant increase in credit risk for our business and government loan portfolios are not expected to change frequently.

All loans on which repayment of principal or payment of interest is contractually 30 days in arrears and all business and government loans that have migrated to the watch list are automatically migrated to stage 2 from stage 1.

As at October 31, 2019, if the ECL for the stage 2 performing loans were measured using stage 1 ECL as opposed to lifetime ECL, the expected credit losses would be $305 million lower than the total recognized IFRS 9 ECL on performing loans (2018: $273 million).

Measuring both 12-month and lifetime expected credit losses

Our ECL models leverage the PD, LGD, and EAD parameters, as well as the portfolio segmentation used to calculate Basel expected loss regulatory adjustments for the portion of our retail and business and government portfolios under the advanced internal ratings-based (AIRB) approach. Adjustments are made to the Basel parameters to meet IFRS 9 requirements, including the conversion of through-the-cycle and downturn parameters used in the Basel regulatory calculations to point-in-time parameters used under IFRS 9 that consider forward-looking information. For standardized business and government portfolios, available long-run PDs, LGDs and EADs are also converted to point-in-time parameters through the incorporation of forward-looking information for the purpose of measuring ECL under IFRS 9.

Significant judgment is involved in determining which forward-looking information variables are relevant for particular portfolios and in determining the extent by which through-the-cycle parameters should be adjusted for forward-looking information to determine point-in-time parameters. While changes in the set of forward-looking information variables used to convert through-the-cycle PDs, LGDs and EADs into point-in-time parameters can either increase or decrease ECL allowances in a particular period, changes to the mapping of forward-looking information variables to particular portfolios are expected to be infrequent. However, changes in the particular forward-looking information parameters used to quantify point-in-time parameters will be frequent as our forecasts are updated on a quarterly basis. Increases in the level of pessimism in the forward-looking information variables will cause increases in expected credit losses, while increases in the level of optimism in the forward-looking information variables will cause decreases in expected credit losses. These increases and decreases could be significant in any particular period and will start to occur in the period where our outlook of the future changes.

With respect to the lifetime of a financial instrument, the maximum period considered when measuring ECL is the maximum contractual period over which we are exposed to credit risk. For revolving facilities, such as credit cards, the lifetime of a credit card account is the expected behavioural life. Significant judgment is involved in the estimate of the expected behavioural life. Increases in the expected behavioural life will increase the amount of ECL allowances, in particular for revolving loans in stage 2.

Forecasting forward-looking information for multiple scenarios and determining the probability weighting of the scenarios

As indicated above, forward-looking information is incorporated into both our assessment of whether the financial asset has experienced a significant increase in credit risk since its initial recognition and in our estimate of ECL. From analysis of historical data, our risk management function has identified and reflected in our ECL allowance those relevant forward-looking information variables that contribute to credit risk and losses within our retail and business and government loan portfolios. Within our retail loan portfolio, key forward-looking information variables include unemployment rates, housing prices and gross domestic product (GDP) growth. In many cases these variables are forecasted at the provincial level. Housing prices are also forecasted at the municipal level in some cases. Within our business and government loan portfolio, key drivers that impact the credit performance of the entire portfolio include S&P 500 growth rates, business credit growth rates, unemployment rates and credit spreads, while forward-looking information variables such as commodity prices and mining activity are significant for certain portfolios.

Our forecasting process leverages the process used prior to the adoption of IFRS 9. For the majority of our loan portfolios, our forecast of forward-looking information variables is established from a "base case" or most likely scenario that is used internally by management for planning and forecasting purposes. For most of the forward-looking information variables related to our Canadian businesses, we have forecast scenarios by province. In forming the "base case" scenario, we consider the forecasts of monetary authorities such as the Organisation for Economic Co-operation and Development (OECD), the International Monetary Fund (IMF), and the Bank of Canada, as well as private sector economists. We then derive reasonably possible "upside case" and "downside case" scenarios using external forecasts that are above and below our "base case" and the application of management judgment. A probability weighting is assigned to our "base case", "upside case" and "downside case" scenarios based on management judgment.

The following table provides the base case, upside case and downside case scenario forecasts for select forward-looking information variables used to estimate our ECLs. The base case, upside case and downside case amounts shown represent the average value of the forecasts over the respective projection horizons.

As at October 31, 2019	Base case		Upside case		Downside case	
	Average value over the next 12 months	Average value over the remaining forecast period	Average value over the next 12 months	Average value over the remaining forecast period	Average value over the next 12 months	Average value over the remaining forecast period
Canadian GDP year-over-year growth (1)	**1.5 %**	**1.8 %**	**2.3 %**	**2.5 %**	**0.6 %**	**0.8 %**
Canadian unemployment rate (1)	**6.1 %**	**5.9 %**	**5.5 %**	**5.5 %**	**6.4 %**	**6.5 %**
Canadian Housing Price Index growth (1)	**1.6 %**	**2.2 %**	**4.8 %**	**4.0 %**	**(2.2)%**	**(0.8)%**
S&P 500 Index growth rate	**5.0 %**	**4.7 %**	**8.2 %**	**6.6 %**	**(3.7)%**	**(10.3)%**
West Texas Intermediate Oil Price (US$)	**$ 60**	**$ 60**	**$ 67**	**$ 74**	**$ 47**	**$ 43**

As at October 31, 2018	Base case		Upside case	Downside case
	Average value over the next 12 months	Average value over the remaining forecast period	Average value over the forecast period	Average value over the forecast period
Canadian GDP year-over-year growth (1)	1.9 %	1.4 %	2.3 %	1.2 %
Canadian unemployment rate (1)	5.8 %	6.0 %	5.3 %	6.4 %
Canadian Housing Price Index growth (1)	2.2 %	2.3 %	6.4 %	(1.2)%
S&P 500 Index growth rate	4.6 %	(1.4)%	11.3 %	(10.8)%
West Texas Intermediate Oil Price (US$)	$ 67	$ 65	$ 78	$ 52

(1) Federal-level forward-looking forecasts are presented in the table above, which represent the aggregation of the provincial-level forecasts used to estimate our ECL. Housing Price Index growth rates are also forecasted at the municipal level in some cases. As a result, the forecasts for individual provinces or municipalities reflected in our ECLs will differ from the federal forecasts presented above.

The forecasting process is overseen by a governance committee consisting of internal stakeholders from across our bank including Risk Management, Economics, Finance and the impacted SBUs and involves a significant amount of judgment both in determining the forward-looking information forecasts for our various scenarios and in determining the probability weighting assigned to the scenarios. In general, a worsening of our outlook on forecasted forward-looking information for each scenario, an increase in the probability of the "downside case" scenario occurring, or a decrease in the probability of the "upside case" scenario occurring will increase the number of loans migrating from stage 1 to stage 2 and increase the estimated ECL allowance. In contrast, an improvement in our outlook on forecasted forward-looking information, an increase in the probability of the "upside case" scenario occurring, or a decrease in the probability of the "downside case" scenario occurring will have the opposite impact. It is not possible to meaningfully isolate the impact of changes in the various forward-looking information variables for a particular scenario because of both the interrelationship between the variables and the interrelationship between the level of pessimism inherent in a particular scenario and its probability of occurring.

As indicated above, forecasting forward-looking information for multiple scenarios and determining the probability weighting of the scenarios involves a high degree of management judgment. If we were to only use our base case scenario for the measurement of ECL for our performing loans, our ECL allowance would be $63 million lower than the recognized ECL as at October 31, 2019 (2018: $45 million). If we were to only use our downside case scenario for the measurement of ECL for our performing loans, our ECL allowance would be $254 million higher than the recognized ECL as at October 31, 2019 (2018: $241 million). This sensitivity is isolated to the measurement of ECL and therefore did not consider changes in the migration of exposures between stage 1 and stage 2 from the determination of the significant increase in credit risk that would have resulted in a 100% base case scenario or a 100% downside scenario.

Management overlays to ECL allowance estimates are adjustments which we use in circumstances where we judge that our existing inputs, assumptions and model techniques do not capture all relevant risk factors. The emergence of new macroeconomic, microeconomic or political events, along with expected changes to parameters, models or data that are not incorporated in our current parameters, internal risk rating migrations, or forward-looking information are examples of such circumstances. The use of management overlays requires the application of significant judgment that may impact the amount of ECL allowances recognized.

The following tables provide the gross carrying amount of loans, and the contractual amounts of undrawn credit facilities and other off-balance sheet exposures based on the application of our 12-month point in time PDs under IFRS 9 to our risk management PD bands for retail exposures, and based on our internal risk ratings for business and government exposures. Refer to "Credit risk" section of the MD&A for details on the CIBC risk categories.

Loans[1]

$ millions, as at October 31				**2019**				2018
	Stage 1	**Stage 2**	**Stage 3 [2][3][4]**	**Total**	Stage 1	Stage 2	Stage 3 [2][3][4]	Total
Residential mortgages								
– Exceptionally low	**$ 142,260**	**$ –**	**$ –**	**$ 142,260**	$ 141,556	$ –	$ –	$ 141,556
– Very low	**37,140**	**–**	**–**	**37,140**	40,225	–	–	40,225
– Low	**17,315**	**1,010**	**–**	**18,325**	15,321	798	–	16,119
– Medium	**1,207**	**5,312**	**–**	**6,519**	859	4,905	–	5,764
– High	**11**	**1,162**	**–**	**1,173**	–	996	–	996
– Default	**–**	**–**	**597**	**597**	–	–	510	510
– Not rated	**2,251**	**233**	**154**	**2,638**	2,163	249	167	2,579
Gross residential mortgages [5][6]	**200,184**	**7,717**	**751**	**208,652**	200,124	6,948	677	207,749
ECL allowance	**28**	**43**	**140**	**211**	27	44	143	214
Net residential mortgages	**200,156**	**7,674**	**611**	**208,441**	200,097	6,904	534	207,535
Personal								
– Exceptionally low	**24,258**	**–**	**–**	**24,258**	23,808	–	–	23,808
– Very low	**4,321**	**1,353**	**–**	**5,674**	3,813	1,374	–	5,187
– Low	**4,955**	**1,582**	**–**	**6,537**	5,954	702	–	6,656
– Medium	**3,703**	**1,611**	**–**	**5,314**	4,428	1,151	–	5,579
– High	**302**	**613**	**–**	**915**	245	691	–	936
– Default	**–**	**–**	**164**	**164**	–	–	142	142
– Not rated	**720**	**29**	**40**	**789**	677	33	40	750
Gross personal [6]	**38,259**	**5,188**	**204**	**43,651**	38,925	3,951	182	43,058
ECL allowance	**160**	**265**	**128**	**553**	176	196	109	481
Net personal	**38,099**	**4,923**	**76**	**43,098**	38,749	3,755	73	42,577
Credit card								
– Exceptionally low	**3,015**	**–**	**–**	**3,015**	3,405	–	–	3,405
– Very low	**1,142**	**83**	**–**	**1,225**	1,747	50	–	1,797
– Low	**5,619**	**274**	**–**	**5,893**	3,809	710	–	4,519
– Medium	**1,344**	**565**	**–**	**1,909**	1,011	1,241	–	2,252
– High	**10**	**538**	**–**	**548**	10	528	–	538
– Default	**–**	**–**	**–**	**–**	–	–	–	–
– Not rated	**158**	**7**	**–**	**165**	162	–	–	162
Gross credit card	**11,288**	**1,467**	**–**	**12,755**	10,144	2,529	–	12,673
ECL allowance	**129**	**291**	**–**	**420**	88	330	–	418
Net credit card	**11,159**	**1,176**	**–**	**12,335**	10,056	2,199	–	12,255
Business and government [7]								
– Investment grade	**46,800**	**251**	**–**	**47,051**	42,993	221	–	43,214
– Non-investment grade	**80,780**	**3,443**	**–**	**84,223**	69,560	3,819	–	73,379
– Watchlist	**374**	**1,575**	**–**	**1,949**	279	1,201	–	1,480
– Default	**–**	**–**	**866**	**866**	–	–	504	504
– Not rated	**752**	**79**	**45**	**876**	1,040	86	117	1,243
Gross business and government [5][8]	**128,706**	**5,348**	**911**	**134,965**	113,872	5,327	621	119,820
ECL allowance	**209**	**146**	**376**	**731**	159	137	230	526
Net business and government	**128,497**	**5,202**	**535**	**134,234**	113,713	5,190	391	119,294
Total net amount of loans	**$ 377,911**	**$ 18,975**	**$ 1,222**	**$ 398,108**	$ 362,615	$ 18,048	$ 998	$ 381,661

(1) Other financial assets classified at amortized cost were excluded from the table above as their ECL allowances were immaterial as at October 31, 2019. In addition, the table excludes debt securities measured at FVOCI, for which ECL allowances of $23 million (2018: $23 million) were recognized in AOCI.
(2) Includes purchased credit-impaired loans from the acquisition of The PrivateBank.
(3) Excludes foreclosed assets of $25 million (2018: $14 million) which were included in Other assets on our consolidated balance sheet.
(4) As at October 31, 2019, 90% (2018: 89%) of stage 3 impaired loans were either fully or partially collateralized.
(5) Includes $60 million (2018: $12 million) of residential mortgages and $21,182 million (2018: $16,424 million) of business and government loans that are measured at FVTPL.
(6) The internal risk rating grades presented for residential mortgages and certain personal loans do not take into account loan guarantees or insurance issued by the Canadian government (federal or provincial), Canadian government agencies, or private insurers, as the significant increase in credit risk of these loans is based on relative changes in the loans' lifetime PD without considering collateral or other credit enhancements.
(7) Certain comparative information has been reclassified between internal risk rating categories.
(8) Includes customers' liability under acceptances of $9,167 million (2018: $10,265 million).

Undrawn credit facilities and other off-balance sheet exposures

$ millions, as at October 31				2019				2018
	Stage 1	**Stage 2**	**Stage 3**	**Total**	Stage 1	Stage 2	Stage 3	Total
Retail								
– Exceptionally low	**$ 106,696**	**$ 120**	**$ –**	**$ 106,816**	$ 100,772	$ –	$ –	$ 100,772
– Very low	**7,341**	**1,126**	**–**	**8,467**	10,217	1,014	–	11,231
– Low	**10,974**	**1,357**	**–**	**12,331**	7,873	1,612	–	9,485
– Medium	**1,737**	**752**	**–**	**2,489**	1,729	1,188	–	2,917
– High	**255**	**495**	**–**	**750**	234	417	–	651
– Default	**–**	**–**	**19**	**19**	–	–	13	13
– Not rated	**397**	**32**	**–**	**429**	348	33	–	381
Gross retail	**127,400**	**3,882**	**19**	**131,301**	121,173	4,264	13	125,450
ECL allowance	**30**	**55**	**–**	**85**	28	43	–	71
Net retail	**127,370**	**3,827**	**19**	**131,216**	121,145	4,221	13	125,379
Business and government (1)								
– Investment grade	**78,906**	**296**	**–**	**79,202**	78,678	390	–	79,068
– Non-investment grade	**52,379**	**1,282**	**–**	**53,661**	41,780	1,198	–	42,978
– Watchlist	**65**	**575**	**–**	**640**	81	404	–	485
– Default	**–**	**–**	**69**	**69**	–	–	7	7
– Not rated	**688**	**60**	**–**	**748**	670	49	–	719
Gross business and government	**132,038**	**2,213**	**69**	**134,320**	121,209	2,041	7	123,257
ECL allowance	**30**	**12**	**2**	**44**	21	10	–	31
Net business and government	**132,008**	**2,201**	**67**	**134,276**	121,188	2,031	7	123,226
Total net undrawn credit facilities and other off-balance sheet exposures	**$ 259,378**	**$ 6,028**	**$ 86**	**$ 265,492**	$ 242,333	$ 6,252	$ 20	$ 248,605

(1) Certain comparative information has been reclassified between internal risk rating categories.

Purchased credit-impaired loans

Purchased credit-impaired loans resulting from the acquisition of The PrivateBank include business and government and consumer loans with outstanding unpaid principal balances of $8 million, $20 million and $134 million; and fair values of $6 million, $14 million, and $105 million, respectively, as at October 31, 2019, October 31, 2018, and June 23, 2017 (the acquisition date).

Loans contractually past due but not impaired

This comprises loans where repayment of principal or payment of interest is contractually in arrears. The following table provides an aging analysis of the contractually past due loans:

$ millions, as at October 31	**Less than 31 days**	**31 to 90 days**	**Over 90 days**	**2019 Total**	2018 Total
Residential mortgages	**$ 2,608**	**$ 862**	**$ –**	**$ 3,470**	$ 3,354
Personal	**763**	**185**	**–**	**948**	937
Credit card	**559**	**180**	**99**	**838**	822
Business and government	**555**	**177**	**–**	**732**	683
	$ 4,485	**$ 1,404**	**$ 99**	**$ 5,988**	$ 5,796

During the year, gross interest income that would have been recorded if impaired loans were treated as current was $99 million (2018: $81 million), of which $46 million (2018: $27 million) was in Canada and $53 million (2018: $54 million) was outside Canada. During the year, interest recognized on impaired loans was $40 million (2018: $23 million), and interest recognized on loans before being classified as impaired was $58 million (2018: $59 million), of which $43 million (2018: $41 million) was in Canada and $15 million (2018: $18 million) was outside Canada.

Net interest income after provision for credit losses

$ millions, for the year ended October 31	**2019**	2018	2017
Interest income	**$ 20,697**	$ 17,505	$ 13,593
Interest expense	**10,146**	7,440	4,616
Net interest income	**10,551**	10,065	8,977
Provision for credit losses	**1,286**	870	829
Net interest income after provision for credit losses	**$ 9,265**	$ 9,195	$ 8,148

Modified financial assets

From time to time, we may modify the contractual terms of loans classified as stage 2 and stage 3 for which the borrower has experienced financial difficulties, through the granting of a concession in the form of below-market rates or terms that we would not otherwise have considered. Changes to the present value of the estimated future cash payments through the expected life of the modified loan discounted at the loan's original effective interest rate are recognized through changes in the ECL allowance and provision for credit losses. During the year ended October 31, 2019, loans classified as stage 2 with an amortized cost of $223 million (2018: $133 million) and loans classified as stage 3 with an amortized cost of $123 million (2018: $119 million), in each case before the time of modification, were modified through the granting of a financial concession in response to the borrower having experienced financial difficulties. In addition, the gross carrying amount of previously modified stage 2 or stage 3 loans that have returned to stage 1 during the year ended October 31, 2019 was $15 million (2018: $42 million).

Note 6 | Structured entities and derecognition of financial assets

Structured entities

SEs are entities that have been designed so that voting or similar rights are not the dominant factor in deciding who controls the entity, such as when any voting rights relate to administrative tasks only and the relevant activities are directed by means of contractual arrangements. SEs are entities that are created to accomplish a narrow and well-defined objective. CIBC is involved with various types of SEs for which the business activities include securitization of financial assets, asset-backed financings, and asset management.

We consolidate an SE when the substance of the relationship indicates that we control the SE.

Consolidated structured entities

We consolidate the following SEs:

Multi-seller conduit

We sponsor a consolidated multi-seller conduit in Canada that purchases financial assets from clients and finances the purchases by issuing ABS. The sellers to the conduit continue to service the assets and are exposed to credit losses realized on these assets through the provision of over-collateralization. We hold all of the outstanding ABS.

Credit card securitization trusts

We sell an ownership interest in a revolving pool of credit card receivables generated under certain credit card accounts to Cards II Trust (Cards II), which purchases a proportionate share of credit card receivables on certain credit card accounts within designated portfolios, with the proceeds received from the issuance of notes.

Our credit card securitizations are revolving securitizations, with credit card receivable balances fluctuating from month to month as credit card clients repay their balances and new receivables are generated.

The notes are presented as Secured borrowings within Deposits on the consolidated balance sheet.

As at October 31, 2019, $2.9 billion of credit card receivable assets with a fair value of $2.9 billion (2018: $4.1 billion with a fair value of $4.1 billion) supported associated funding liabilities of $2.9 billion with a fair value of $2.9 billion (2018: $4.1 billion with a fair value of $4.1 billion).

Covered bond guarantor

We have two covered bond programs, structured and legislative. Covered bonds are full recourse on-balance sheet obligations that are also fully collateralized by assets over which bondholders enjoy a priority claim in the event of CIBC's insolvency. Under the structured program, we transfer a pool of CMHC insured mortgages to the CIBC Covered Bond Guarantor Limited Partnership that warehouses these mortgages and serves as a guarantor to bondholders for payment of interest and principal. Under the legislative program, we transfer a pool of conventional uninsured mortgages to the CIBC Covered Bond (Legislative) Guarantor Limited Partnership that warehouses these mortgages and serves as a guarantor to bondholders for payment of interest and principal.

For both covered bond programs, the assets are owned by the guarantor and not CIBC. As at October 31, 2019, our structured program had outstanding covered bond liabilities of nil with a fair value of nil (2018: $0.3 billion with a fair value of $0.3 billion) and our legislative program had outstanding covered bond liabilities of $18.9 billion with a fair value of $19.0 billion (2018: $19.5 billion with a fair value of $19.6 billion). The covered bond liabilities are supported by a contractually determined portion of the assets transferred to the guarantor and certain contractual arrangements designed to protect the bondholders from adverse events, including foreign currency fluctuations.

CIBC-managed investment funds

We establish and manage investment funds such as mutual funds and pooled funds. We act as an investment manager and earn market-based management fees, and for certain pooled funds, performance fees which are generally based on the performance of the funds. Seed capital is provided from time to time to CIBC-managed investment funds for initial launch. We consolidate those investment funds in which we have power to direct the relevant activities of the funds and in which our seed capital, or our units held, are significant relative to the total variability of returns of the funds such that we are deemed to be a principal rather than an agent. As at October 31, 2019, the total assets and non-controlling interests in consolidated CIBC-managed investment funds were $23 million and $15 million, respectively (2018: $64 million and $31 million, respectively). Non-controlling interests in consolidated CIBC-managed investment funds are included in Other liabilities as the investment fund units are mandatorily redeemable at the option of the investor.

Community-based tax-advantaged investments

We sponsor certain SEs that invest in community development projects in the U.S. through the issuance of below-market loans that generate a return primarily through the realization of tax credits. As at October 31, 2019, the program had outstanding loans of $55 million (2018: $59 million).

Non-consolidated structured entities

The following SEs are not consolidated by CIBC:

Single-seller and multi-seller conduits

We manage and administer a single-seller conduit and several CIBC-sponsored multi-seller conduits in Canada. The multi-seller conduits acquire direct or indirect ownership or security interests in pools of financial assets from our clients and finance the acquisitions by issuing asset-backed commercial paper (ABCP) to investors. The single-seller conduit acquires financial assets and finances these acquisitions through a credit facility provided by a syndicate of financial institutions. The sellers to the conduits may continue to service the assets and may be exposed to credit losses realized on these assets, typically through the provision of over-collateralization or another form of retained interest. The conduits may obtain credit enhancement from third-party providers. As at October 31, 2019, the total assets in the single-seller conduit and multi-seller conduits amounted to $0.5 billion and $7.1 billion, respectively (2018: $0.5 billion and $7.1 billion, respectively).

We generally provide the multi-seller conduits with commercial paper backstop liquidity facilities, securities distribution, and provide both the single and multi-seller conduits with accounting, cash management, and operations services. The liquidity facilities for the managed and administered multi-seller conduits require us to provide funding, subject to the satisfaction of certain conditions with respect to the conduits, for ABCP not placed with external investors. We also may purchase ABCP issued by the multi-seller conduits for market-making purposes.

We are required to maintain certain short-term and/or long-term debt ratings with respect to the liquidity facilities that we provide to the sponsored multi-seller conduits. If we are downgraded below the level specified under the terms of those facilities, we must provide alternative satisfactory liquidity arrangements, such as procuring an alternative liquidity provider that meets the minimum rating requirements.

We may also act as the counterparty to derivative contracts entered into by a multi-seller conduit in order to convert the yield of the underlying assets to match the needs of the multi-seller conduit's investors or to mitigate the interest rate, basis, and currency risk within the conduit.

All fees earned in respect of activities with the conduits are on a market basis.

Third-party structured vehicles – continuing

We have investments in and provide loans, liquidity and credit facilities to third-party SEs. We also have investments in limited partnerships in which we generally are a passive investor of the limited partnerships as a limited partner, and in some cases, we are the co-general partner and have significant influence over the limited partnerships. Similar to other limited partners, we are obligated to provide funding up to our commitment level to these limited partnerships.

Pass-through investment structures

We have exposure to units of third-party or CIBC-managed investment funds. We enter into equity derivative transactions with third-party investment funds to pass-through the return of these referenced funds. These transactions provide the investors of the third-party managed investment funds with the desired exposure to the referenced funds in a tax efficient manner.

CIBC Capital Trust

We have issued senior deposit notes to CIBC Capital Trust, which funds the purchase of these notes through the issuance of CIBC Tier 1 Notes (Notes) that match the term of the senior deposit notes. The Notes are eligible for Tier 1 regulatory capital treatment and are subject to the phase-out rules for capital instruments that will be viewed as non-qualifying capital instruments. See Note 16 for additional details.

CIBC-managed investment funds

As indicated above, we establish investment funds, including mutual funds and pooled funds, to provide clients with investment opportunities and we may receive management fees and performance fees. We may hold insignificant amounts of fund units in these CIBC-managed funds. We do not consolidate these funds if we do not have significant variability of returns from our interests in these funds such that we are deemed to be an agent through our capacity as the investment manager, rather than a principal. We do not guarantee the performance of CIBC-managed investment funds. As at October 31, 2019, the total AUM in the non-consolidated CIBC-managed investment funds amounted to $122.7 billion (2018: $114.4 billion).

CIBC structured collateralized debt obligation vehicles

We hold exposures to structured CDO vehicles through investments in, or written credit derivatives referencing, these structured vehicles. We may also provide liquidity facilities or other credit facilities. The structured vehicles are funded through the issuance of senior and subordinated tranches. We may hold a portion of those senior and/or subordinated tranches.

We previously curtailed our business activity in structuring CDO vehicles within our structured credit run-off portfolio. Our exposures to CDO vehicles mainly arose through our previous involvement in acting as structuring and placement agent for the CDO vehicles. As at October 31, 2019, the assets in the CIBC structured CDO vehicles have a total principal amount of $232 million (2018: $334 million).

Third-party structured vehicles – structured credit run-off

Similar to our structured activities, we also curtailed our business activities in third-party structured vehicles, within our structured credit run-off portfolio. These positions were initially traded as intermediation, correlation and flow trading, which earned us a spread on matching positions.

Community Reinvestment Act investments

We hold debt and equity investments in limited liability entities to further our U.S. Community Reinvestment Act initiatives with a carrying value of $279 million (2018: $241 million). These entities invest in qualifying community development projects, including affordable housing projects, that generate a return primarily by the realization of tax credits. Similar to other limited investors in these entities, we are obligated to provide funding up to our commitment level to these limited liability entities. As at October 31, 2019, the total assets of these limited liability entities were $4.8 billion (2018: $4.6 billion).

Our on-balance sheet amounts and maximum exposure to loss related to SEs that are not consolidated are set out in the table below. The maximum exposure comprises the carrying value of unhedged investments, the notional amounts for liquidity and credit facilities, and the notional amounts less accumulated fair value losses for unhedged written credit derivatives on SE reference assets. The impact of CVA is not considered in the table below.

$ millions, as at October 31, 2019	Single-seller and multi-seller conduits	Third-party structured vehicles – continuing	Structured vehicles run-off [1]	Other [2]
On-balance sheet assets at carrying value [3]				
Securities	**$ 26**	**$ 1,930**	**$ 3**	**$ 320**
Loans	**87**	**1,415**	**–**	**–**
Investments in equity-accounted associates and joint ventures	**–**	**–**	**–**	**12**
	$ 113	**$ 3,345**	**$ 3**	**$ 332**
October 31, 2018	$ 102	$ 3,347	$ 3	$ 303
On-balance sheet liabilities at carrying value [3]				
Deposits	**$ –**	**$ –**	**$ –**	**$ 302**
Derivatives [4]	**–**	**–**	**112**	**–**
	$ –	**$ –**	**$ 112**	**$ 302**
October 31, 2018	$ –	$ –	$ 131	$ 1,600
Maximum exposure to loss, net of hedges				
Investments and loans	**$ 113**	**$ 3,345**	**$ 3**	**$ 332**
Notional of written derivatives, less fair value losses	**–**	**–**	**27**	**–**
Liquidity, credit facilities and commitments	**7,137** [5]	**2,358**	**13**	**127**
Less: hedges of investments, loans and written derivatives exposure	**–**	**–**	**(30)**	**(41)**
	$ 7,250	**$ 5,703**	**$ 13**	**$ 418**
October 31, 2018	$ 7,238	$ 5,003	$ 13	$ 368

(1) Includes CIBC structured CDO vehicles and third-party structured vehicles.
(2) Includes pass-through investment structures, CIBC Capital Trust, and CIBC-managed investment funds and Community Reinvestment Act-related investment vehicles.
(3) Excludes SEs established by CMHC, Fannie Mae, Freddie Mac, Ginnie Mae, FHLB, Federal Farm Credit Bank, and Student Loan Marketing Association.
(4) Comprises written credit default swaps (CDS) and total return swaps (TRS) under which we assume exposures. Excludes foreign exchange derivatives, interest rate derivatives and other derivatives provided as part of normal client facilitation.
(5) Excludes an additional $1.6 billion (2018: $1.7 billion) relating to our backstop liquidity facilities provided to the multi-seller conduits as part of their commitment to fund purchases of additional assets. Also excludes $26 million (2018: $9 million) of our direct investments in the multi-seller conduits which we consider investment exposure.

We also hold investments in a variety of third-party investment funds, which include, but are not limited to, exchange-traded funds, mutual funds, and investment trusts. We buy and sell units of these investment funds as part of trading activities or client facilitation businesses that are managed as part of larger portfolios. We generally are a passive investor and are not the investment manager in any of these investment funds. We are not the sponsor of any third-party investment funds, nor do we have the power over key decision-making activities of the funds. Our maximum exposure to loss from our investments is limited to the carrying amounts of our investments and any unutilized commitment we have provided to these funds. In addition, we issue certain structured notes and enter into equity derivatives that are referenced to the return of certain investment funds. Accordingly, we do not include our interests in these third-party investment funds in the table above.

Derecognition of financial assets

We enter into transactions in the normal course of business in which we transfer recognized financial assets directly to third parties, but retain substantially all of the risks and rewards of those assets. The risks include credit, interest rate, foreign exchange, pre-payment and other price risks whereas the rewards include income streams associated with the assets. Due to the retention of risks, the transferred financial assets are not derecognized and such transfers are accounted for as secured borrowing transactions.

The majority of our financial assets transferred to non-consolidated entities that do not qualify for derecognition are: (i) residential mortgage loans under securitization transactions; (ii) securities held by counterparties as collateral under repurchase agreements; and (iii) securities lent under securities lending agreements.

Residential mortgage securitizations

We securitize fully insured fixed- and variable-rate residential mortgage pools through the creation of National Housing Act (NHA) MBS under the NHA MBS Program, sponsored by CMHC. Under the Canada Mortgage Bond Program, sponsored by CMHC, we sell MBS to a government-sponsored securitization trust that issues securities to investors. We do not consolidate the securitization trust. We may act as a counterparty in interest rate swap agreements where we pay the trust the interest due to investors and receive the interest on the MBS. We have also sold MBS directly to CMHC under the Government of Canada’s Insured Mortgage Purchase Program as well as other third-party investors.

The sale of mortgage pools that comprise the NHA MBS does not qualify for derecognition as we retain the pre-payment, credit, and interest rate risks associated with the mortgages, which represent substantially all the risks and rewards. As a result, the mortgages remain on our consolidated balance sheet and are carried at amortized cost. We also recognize the cash proceeds from the securitization as Deposits – Secured borrowings.

Securities held by counterparties as collateral under repurchase agreements

We enter into arrangements whereby we sell securities but enter into simultaneous arrangements to repurchase the securities at a fixed price on a future date thereby retaining substantially all the risks and rewards. As a result, the securities remain on our consolidated balance sheet.

Securities lent for cash collateral or for securities collateral

We enter into arrangements whereby we lend securities but with arrangements to receive the securities at a future date, thereby retaining substantially all the risks and rewards. As a result, the securities remain on our consolidated balance sheet.

The following table provides the carrying amount and fair value of transferred financial assets that did not qualify for derecognition and the associated financial liabilities:

$ millions, as at October 31	2019		2018	
	Carrying amount	**Fair value**	Carrying amount	Fair value
Residential mortgage securitizations [1]	**$ 16,245**	**$ 16,264**	$ 18,433	$ 18,286
Securities held by counterparties as collateral under repurchase agreements [2]	**15,663**	**15,663**	10,482	10,482
Securities lent for cash collateral [2]	**45**	**45**	15	15
Securities lent for securities collateral [2]	**21,789**	**21,789**	21,277	21,277
	$ 53,742	**$ 53,761**	$ 50,207	$ 50,060
Associated liabilities [3]	**$ 54,591**	**$ 54,734**	$ 50,448	$ 50,564

(1) Consists mainly of Canadian residential mortgage loans transferred to Canada Housing Trust. Certain cash in transit balances related to the securitization process amounting to $738 million (2018: $705 million) have been applied to reduce these balances.
(2) Does not include over-collateralization of assets pledged. Repurchase and securities lending arrangements are conducted with both CIBC-owned and third-party assets on a pooled basis. The carrying amounts represent an estimated allocation related to the transfer of our own financial assets.
(3) Includes the obligation to return off-balance sheet securities collateral on securities lent.

Note 7 | Land, buildings and equipment

$ millions, as at or for the year ended October 31		Land and buildings [1]	Computer equipment	Office furniture, equipment and other [2]	Leasehold improvements	Total
2019	**Cost**					
	Balance at beginning of year	**$ 1,384**	**$ 1,164**	**$ 937**	**$ 1,134**	**$ 4,619**
	Additions [3]	**22**	**118**	**82**	**70**	**292**
	Disposals [4]	**(23)**	**(239)**	**(6)**	**(1)**	**(269)**
	Adjustments [5]	**–**	**–**	**–**	**1**	**1**
	Balance at end of year	**$ 1,383**	**$ 1,043**	**$ 1,013**	**$ 1,204**	**$ 4,643**
2018	Balance at end of year	$ 1,384	$ 1,164	$ 937	$ 1,134	$ 4,619
2019	**Accumulated depreciation**					
	Balance at beginning of year	**$ 644**	**$ 953**	**$ 477**	**$ 750**	**$ 2,824**
	Depreciation [4]	**38**	**105**	**48**	**72**	**263**
	Disposals [4]	**(13)**	**(239)**	**(4)**	**(1)**	**(257)**
	Adjustments [5]	**–**	**–**	**–**	**–**	**–**
	Balance at end of year	**$ 669**	**$ 819**	**$ 521**	**$ 821**	**$ 2,830**
2018	Balance at end of year	$ 644	$ 953	$ 477	$ 750	$ 2,824
	Net book value					
	As at October 31, 2019	**$ 714**	**$ 224**	**$ 492**	**$ 383**	**$ 1,813**
	As at October 31, 2018	$ 740	$ 211	$ 460	$ 384	$ 1,795

(1) Includes land and building underlying a finance lease arrangement. See below for further details.
(2) Includes $173 million (2018: $152 million) of work-in-progress not subject to depreciation.
(3) Includes acquisitions through business combinations of $1 million (2018: nil).
(4) Includes write-offs of fully depreciated assets.
(5) Includes foreign currency translation adjustments.

Net additions and disposals during the year were: Canadian Personal and Small Business Banking net additions of $3 million (2018: net additions of $45 million); Canadian Commercial Banking and Wealth Management net additions of $3 million (2018: net additions of $6 million); U.S. Commercial Banking and Wealth Management net additions of $27 million (2018: net additions of $28 million); Capital Markets net additions of $1 million (2018: net additions of $1 million); and Corporate and Other net disposals of $11 million (2018: net additions of $138 million).

Finance lease property

Included in land and buildings above is a finance lease property, a portion of which is rented out and considered an investment property. The carrying value of the finance lease property is as follows:

$ millions, for the year ended October 31	2019	2018
Balance at beginning of year	**$ 363**	$ 379
Depreciation	**(24)**	(23)
Foreign currency adjustments	**–**	7
Balance at end of year	**$ 339**	$ 363

Rental income of $98 million (2018: $97 million; 2017: $99 million) was generated from the investment property. Interest expense of $24 million (2018: $25 million; 2017: $28 million) and non-interest expenses of $44 million (2018: $49 million; 2017: $40 million) were incurred in respect of the finance lease property. Our commitment related to the finance lease is disclosed in Note 21.

Note 8 Goodwill, software and other intangible assets

Goodwill

The carrying amount of goodwill is reviewed for impairment annually as at August 1 and whenever there are events or changes in circumstances which indicate that the carrying amount may not be recoverable. Goodwill is allocated to CGUs for the purposes of impairment testing based on the lowest level for which identifiable cash inflows are largely independent of cash inflows from other assets or groups of assets. The goodwill impairment test is performed by comparing the recoverable amount of the CGU to which goodwill has been allocated with the carrying amount of the CGU including goodwill, with any deficiency recognized as impairment to goodwill. The recoverable amount of a CGU is defined as the higher of its estimated fair value less cost to sell and value in use.

We have three significant CGUs to which goodwill has been allocated. The changes in the carrying amount of goodwill are allocated to each CGU as follows:

		CGUs				
$ millions, as at or for the year ended October 31		CIBC FirstCaribbean	Canadian Wealth Management	U.S. Commercial Banking and Wealth Management	Other	Total
2019	**Balance at beginning of year**	**$ 413**	**$ 884**	**$ 4,078**	**$ 189**	**$ 5,564**
	Acquisitions	**–**	**–**	**4**	**14**	**18**
	Impairment	**(135)**	**–**	**–**	**–**	**(135)**
	Foreign currency translation adjustments	**–**	**–**	**2**	**–**	**2**
	Balance at end of year	**$ 278**	**$ 884**	**$ 4,084**	**$ 203**	**$ 5,449**
2018	Balance at beginning of year (1)	$ 405	$ 884	$ 3,952	$ 126	$ 5,367
	Acquisitions	–	–	29 (2)	62	91
	Impairment	–	–	–	–	–
	Foreign currency translation adjustments	8	–	97	1	106
	Balance at end of year	$ 413	$ 884	$ 4,078	$ 189	$ 5,564

(1) Net of cumulative impairment charges for CIBC FirstCaribbean goodwill of $623 million, and nil for other CGUs.
(2) Additional goodwill recognized from our acquisition of The PrivateBank. See Note 3 for additional details.

Impairment testing of goodwill and key assumptions

CIBC FirstCaribbean

CIBC acquired a controlling interest in CIBC FirstCaribbean in December 2006 and now holds 91.7% of its shares. CIBC FirstCaribbean is a major Caribbean bank offering a full range of financial services in corporate and investment banking, retail and business banking, and wealth management. CIBC FirstCaribbean, which has assets of approximately US$12 billion, operates in the Caribbean and is traded on the stock exchanges of Barbados and Trinidad. The results of CIBC FirstCaribbean are included in Corporate and Other.

In the fourth quarter of 2019, we performed our annual impairment test and determined that the estimated recoverable amount of the CIBC FirstCaribbean CGU was less than its carrying amount as a result of our assessment of the valuation implied by the expected sale of

CIBC's controlling interest in CIBC FirstCaribbean. As a result, we recognized a goodwill impairment charge in other non-interest expense of $135 million. This charge is reflected in Corporate and Other. Estimation of the recoverable amount is an area of significant judgment. Reductions in the estimated recoverable amount could arise from various factors, including closing adjustments related to the planned sale of CIBC's controlling interest in CIBC FirstCaribbean and other changes in market conditions.

See Note 3 for additional details on the expected sale of our controlling interest in CIBC FirstCaribbean.

Canadian Wealth Management

The recoverable amount of the Canadian Wealth Management CGU is based on a fair value less cost to sell calculation. The fair value is estimated using an earnings-based approach whereby the forecasted earnings are based on the Wealth Management internal plan which was approved by management and covers a three-year period. The calculation incorporates the forecasted earnings multiplied by an earnings multiple derived from observable price-to-earnings multiples of comparable wealth management institutions. The price-to-earnings multiples of those comparable wealth management institutions ranged from 8.0 to 10.9 as at August 1, 2019 (August 1, 2018: 9.2 to 19.2).

We have determined that the estimated recoverable amount of the Wealth Management CGU was well in excess of its carrying amount as at August 1, 2019. As a result, no impairment charge was recognized during 2019.

If alternative reasonably possible changes in key assumptions were applied, the result of the impairment test would not differ.

U.S. Commercial Banking and Wealth Management

During 2017, we completed the acquisitions of The PrivateBank and Geneva Advisors. In addition, during 2019, we completed the acquisition of LGA. The goodwill arising from these acquisitions has been allocated to the U.S. Commercial Banking and Wealth Management CGU.

The recoverable amount of U.S. Commercial Banking and Wealth Management is based on a value in use calculation that is estimated using a five-year cash flow projection approved by management, and an estimate of the capital required to be maintained to support ongoing operations.

We have determined that for the impairment testing performed as at August 1, 2019, the estimated recoverable amount of the CIBC U.S. Commercial Banking and Wealth Management CGU was in excess of its carrying amount. As a result, no impairment charge was recognized during 2019.

A terminal growth rate of 3.5% as at August 1, 2019 (August 1, 2018: 3.5%) was applied to the years after the five-year forecast. All of the forecasted cash flows were discounted at an after-tax rate of 9.0% as at August 1, 2019 (10.2% pre-tax) which we believe to be a risk-adjusted discount rate appropriate to U.S. Commercial Banking and Wealth Management (we used an after-tax rate of 10.0% as at August 1, 2018). The determination of a discount rate and a terminal growth rate require the exercise of judgment. The discount rate was determined based on the following primary factors: (i) the risk-free rate; (ii) an equity risk premium; and (iii) beta adjustment to the equity risk premium based on a review of betas of comparable publicly traded financial institutions in the region. The terminal growth rate was based on management's expectations of real growth and forecast inflation rates.

See Note 3 for additional details on our acquisitions of The PrivateBank, Geneva Advisors and LGA.

Other

The goodwill relating to the Other CGUs is comprised of amounts which individually are not considered to be significant. We have determined that for the impairment testing performed as at August 1, 2019, the estimated recoverable amount of these CGUs was in excess of their carrying amounts.

Allocation to strategic business units

Goodwill of $5,449 million (2018: $5,564 million) is allocated to the SBUs as follows: Canadian Commercial Banking and Wealth Management of $954 million (2018: $954 million), Corporate and Other of $327 million (2018: $462 million), U.S. Commercial Banking and Wealth Management of $4,084 million (2018: $4,078 million), Capital Markets of $77 million (2018: $63 million), and Canadian Personal and Small Business Banking of $7 million (2018: $7 million).

Software and other intangible assets

The carrying amount of indefinite-lived intangible assets is provided in the following table:

$ millions, as at or for the year ended October 31		Contract based [1]	Brand name [2]	Total
2019	**Balance at beginning of year**	**$ 116**	**$ 26**	**$ 142**
	Foreign currency translation adjustments	**–**	**–**	**–**
	Balance at end of year	**$ 116**	**$ 26**	**$ 142**
2018	Balance at beginning of year	$ 116	$ 25	$ 141
	Foreign currency translation adjustments	–	1	1
	Balance at end of year	$ 116	$ 26	$ 142

(1) Represents management contracts purchased as part of past acquisitions.
(2) Acquired as part of the CIBC FirstCaribbean acquisition.

The components of finite-lived software and other intangible assets are as follows:

$ millions, as at or for the year ended October 31		Software [1]	Core deposit intangibles [2]	Contract based [3]	Customer relationships [4]	Total
2019	**Gross carrying amount**					
	Balance at beginning of year	**$ 2,986**	**$ 611**	**$ 34**	**$ 314**	**$ 3,945**
	Acquisition through business combinations	**–**	**–**	**3**	**9**	**12**
	Additions	**452**	**–**	**–**	**–**	**452**
	Disposals [5]	**(386)**	**–**	**–**	**–**	**(386)**
	Adjustments [6]	**–**	**–**	**1**	**(1)**	**–**
	Balance at end of year	**$ 3,052**	**$ 611**	**$ 38**	**$ 322**	**$ 4,023**
2018	Balance at end of year	$ 2,986	$ 611	$ 34	$ 314	$ 3,945
2019	**Accumulated amortization**					
	Balance at beginning of year	**$ 1,685**	**$ 320**	**$ 6**	**$ 131**	**$ 2,142**
	Amortization and impairment [5]	**331**	**69**	**5**	**35**	**440**
	Disposals [5]	**(385)**	**–**	**–**	**–**	**(385)**
	Adjustments [6]	**–**	**–**	**–**	**(1)**	**(1)**
	Balance at end of year	**$ 1,631**	**$ 389**	**$ 11**	**$ 165**	**$ 2,196**
2018	Balance at end of year	$ 1,685	$ 320	$ 6	$ 131	$ 2,142
	Net book value					
	As at October 31, 2019	**$ 1,421**	**$ 222**	**$ 27**	**$ 157**	**$ 1,827**
	As at October 31, 2018	$ 1,301	$ 291	$ 28	$ 183	$ 1,803

(1) Includes $515 million (2018: $467 million) of work-in-progress not subject to amortization.
(2) Acquired as part of the acquisitions of CIBC FirstCaribbean and The PrivateBank.
(3) Represents a combination of management contracts purchased as part of past acquisitions including The PrivateBank and Geneva Advisors in 2017, as well as LGA and Cleary Gull in 2019.
(4) Represents customer relationships associated with past acquisitions including The PrivateBank and Geneva Advisors in 2017, and LGA in 2019.
(5) Includes write-offs of fully amortized assets.
(6) Includes foreign currency translation adjustments.

Net additions and disposals of gross carrying amount during the year were: Canadian Personal and Small Business Banking net disposals of $12 million (2018: net additions of nil); Canadian Commercial Banking and Wealth Management net disposals of nil (2018: net disposals of nil); U.S. Commercial Banking and Wealth Management net additions of $10 million (2018: net additions of $12 million); Capital Markets net disposals of $1 million (2018: net additions of nil); and Corporate and Other net additions of $81 million (2018: net additions of $351 million).

Note 9 Other assets

$ millions, as at October 31	2019	2018
Accrued interest receivable	$ 1,414	$ 1,292
Defined benefit asset (Note 18)	175	362
Precious metals (1)	1,815	251
Brokers' client accounts	5,471	2,997
Current tax receivable	3,542	3,175
Other prepayments	745	685
Derivative collateral receivable	6,185	5,071
Accounts receivable	759	868
Other	717	582
	$ 20,823	$ 15,283

(1) Includes gold and silver bullion that are measured at fair value using unadjusted market prices quoted in active markets.

Note 10 Deposits[1][2]

$ millions, as at October 31	Payable on demand (3)	Payable after notice (4)	Payable on a fixed date (5)(6)	2019 Total	2018 Total
Personal	$ 12,182	$ 108,485	$ 57,424	$ 178,091	$ 163,879
Business and government (7)	62,706	60,379	134,417	257,502	240,149
Bank	5,120	191	5,913	11,224	14,380
Secured borrowings (8)	–	–	38,895	38,895	42,607
	$ 80,008	$ 169,055	$ 236,649	$ 485,712	$ 461,015
Comprises:					
Held at amortized cost				$ 475,254	$ 453,498
Designated at fair value				10,458	7,517
				$ 485,712	$ 461,015
Total deposits include (9):					
Non-interest-bearing deposits					
Canada				$ 51,880	$ 49,858
U.S.				7,876	7,737
Other international				4,647	4,378
Interest-bearing deposits					
Canada				344,756	321,188
U.S.				56,844	57,522
Other international				19,709	20,332
				$ 485,712	$ 461,015

(1) Includes deposits of $152.8 billion (2018: $155.5 billion) denominated in U.S. dollars and deposits of $30.0 billion (2018: $24.3 billion) denominated in other foreign currencies.
(2) Net of purchased notes of $2,930 million (2018: $2,689 million).
(3) Includes all deposits for which we do not have the right to require notice of withdrawal. These deposits are generally chequing accounts.
(4) Includes all deposits for which we can legally require notice of withdrawal. These deposits are generally savings accounts.
(5) Includes all deposits that mature on a specified date. These deposits are generally term deposits, guaranteed investment certificates, and similar instruments.
(6) Includes $8,985 million (2018: $190 million) of deposits which are subject to the bank recapitalization (bail-in) conversion regulations issued by the Department of Finance (Canada). These regulations provide certain statutory powers to the Canada Deposit Insurance Corporation (CDIC), including the ability to convert specified eligible shares and liabilities of CIBC into common shares in the event that CIBC is determined to be non-viable.
(7) Includes $302 million (2018: $1,600 million) of Notes issued to CIBC Capital Trust.
(8) Comprises liabilities issued by or as a result of activities associated with the securitization of residential mortgages, covered bond programme, and consolidated securitization vehicles.
(9) Classification is based on geographical location of the CIBC office.

Note 11 Other liabilities

$ millions, as at October 31	2019	2018
Accrued interest payable	$ 1,438	$ 1,300
Defined benefit liability (Note 18)	737	645
Gold and silver certificates	114	95
Brokers' client accounts	4,940	3,829
Derivative collateral payable	3,823	4,118
Negotiable instruments	991	930
Accrued employee compensation and benefits	2,281	2,303
Accounts payable and accrued expenses	2,062	2,138
Other (1)	2,645	2,865
	$ 19,031	$ 18,223

(1) Certain prior period amounts have been revised from those previously presented.

Note 12 Derivative instruments

As described in Note 1, in the normal course of business, we use various derivative instruments for both trading and ALM purposes. These derivatives limit, modify or give rise to varying degrees and types of risk.

$ millions, as at October 31	2019		2018	
	Assets	**Liabilities**	Assets	Liabilities
Trading (Note 2)	**$ 22,738**	**$ 23,799**	$ 19,318	$ 19,204
ALM (Note 2) [1]	**1,157**	**1,314**	2,113	1,769
	$ 23,895	**$ 25,113**	$ 21,431	$ 20,973

(1) Comprised of derivatives that qualify for hedge accounting under IAS 39 and derivatives used for economic hedges.

Derivatives used by CIBC

The majority of our derivative contracts are OTC transactions, which consist of: (i) contracts that are bilaterally negotiated and settled between CIBC and the counterparty to the contract; and (ii) contracts that are bilaterally negotiated and then cleared through a central counterparty (CCP). Bilaterally negotiated and settled contracts are usually traded under a standardized International Swaps and Derivatives Association (ISDA) agreement with collateral posting arrangements between CIBC and its counterparties. Terms are negotiated directly with counterparties and the contracts have industry-standard settlement mechanisms prescribed by ISDA. Centrally cleared contracts are generally bilaterally negotiated and then novated to, and cleared through, a CCP. The industry promotes the use of CCPs to clear OTC trades. The central clearing of derivative contracts generally facilitates the reduction of credit exposures due to the ability to net settle offsetting positions. Consequently, derivative contracts cleared through CCPs generally attract less capital relative to those settled with non-CCPs.

The remainder of our derivative contracts are exchange-traded derivatives, which are standardized in terms of their amounts and settlement dates, and are bought and sold on organized and regulated exchanges. These exchange-traded derivative contracts consist primarily of options and futures.

Interest rate derivatives

Forward rate agreements are OTC contracts that effectively fix a future interest rate for a period of time. A typical forward rate agreement provides that at a pre-determined future date, a cash settlement will be made between the counterparties based upon the difference between a contracted rate and a market rate to be determined in the future, calculated on a specified notional principal amount. No exchange of principal amount takes place. Certain forward rate agreements are bilaterally transacted and then novated and settled through a clearing house which acts as a CCP.

Interest rate swaps are OTC contracts in which two counterparties agree to exchange cash flows over a period of time based on rates applied to a specified notional principal amount. A typical interest rate swap would require one counterparty to pay a fixed market interest rate in exchange for a variable market interest rate determined from time to time, with both calculated on a specified notional principal amount. No exchange of principal amount takes place. Certain interest rate swaps are bilaterally transacted and then novated and settled through a clearing house which acts as a CCP.

Interest rate options are contracts in which one party (the purchaser of an option) acquires from another party (the writer of an option), in exchange for a premium, the right, but not the obligation, to either buy or sell, on a specified future date or within a specified time, a specified financial instrument at a contracted price. The underlying financial instrument has a market price which varies in response to changes in interest rates. Options are transacted in both OTC and exchange-traded markets.

Interest rate futures are standardized contracts transacted on an exchange. They are based upon an agreement to buy or sell a specified quantity of a financial instrument on a specified future date, at a contracted price. These contracts differ from forward rate agreements in that they are in standard amounts with standard settlement dates and are transacted through an exchange.

Foreign exchange derivatives

Foreign exchange forwards are OTC contracts in which one counterparty contracts with another to exchange a specified amount of one currency for a specified amount of a second currency, at a future date or range of dates.

Foreign exchange futures contracts are similar in mechanics to foreign exchange forward contracts except that they are in standard currency amounts with standard settlement dates and are transacted through an exchange.

Foreign exchange swap contracts comprise foreign exchange swaps and cross-currency interest rate swaps. Foreign exchange swaps are transactions in which a currency is simultaneously purchased in the spot market and sold for a different currency in the forward market, or vice versa. Cross-currency interest rate swaps are transactions in which counterparties exchange principal and interest flows in different currencies over a period of time. These contracts are used to manage both currency and interest rate exposures.

Credit derivatives

Credit derivatives are OTC contracts designed to transfer the credit risk in an underlying financial instrument (usually termed as a reference asset) from one counterparty to another. The most common credit derivatives are CDS and certain TRS.

CDS contracts provide protection against the decline in value of a reference asset as a result of specified credit events such as default or bankruptcy. These derivatives are similar in structure to an option whereby the purchaser pays a premium to the seller of the CDS contract in return for payment contingent on the occurrence of a credit event. The protection purchaser has recourse to the protection seller for the difference between the face value of the CDS contract and the fair value of the reference asset at the time of settlement. Neither the purchaser nor the seller under the CDS contract has recourse to the entity that issued the reference asset. Certain CDS contracts are cleared through a CCP.

In credit derivative TRS contracts, one counterparty agrees to pay or receive cash amounts based on the returns of a reference asset, including interest earned on these assets in exchange for amounts that are based on prevailing market funding rates. These cash settlements are made regardless of whether there is a credit event. Upon the occurrence of a credit event, the parties may either exchange cash payments according to the value of the defaulted assets or exchange cash based on the notional amount for physical delivery of the defaulted assets.

Equity derivatives

Equity swaps are OTC contracts in which one counterparty agrees to pay, or receive from the other, cash amounts based on changes in the value of a stock index, a basket of stocks or a single stock in exchange for amounts that are based either on prevailing market funding rates or changes in the value of a different stock index, basket of stocks or a single stock. These contracts generally include payments in respect of dividends.

Equity options give the purchaser of the option, for a premium, the right, but not the obligation, to buy from or sell to the writer of an option, an underlying stock index, basket of stocks, or a single stock at a contracted price. Options are transacted in both OTC and exchange markets.

Equity index futures are standardized contracts transacted on an exchange. They are based on an agreement to pay or receive a cash amount based on the difference between the contracted price level of an underlying stock index and its corresponding market price level at a specified future date. There is generally no actual delivery of stocks that comprise the underlying index. These contracts are in standard amounts with standard settlement dates.

Precious metal and other commodity derivatives

We also transact in other derivative products, including commodity forwards, futures, swaps and options, such as precious metal and energy-related products in both OTC and exchange markets.

Notional amounts

The notional amounts are not recorded as assets or liabilities, as they represent the face amount of the contract to which a rate or price is applied to determine the amount of cash flows to be exchanged. In most cases, notional amounts do not represent the potential gain or loss associated with market or credit risk of such instruments.

The following table presents the notional amounts of derivative instruments:

$ millions, as at October 31						**2019**		2018
	Residual term to contractual maturity							
	Less than 1 year	**1 to 5 years**	**Over 5 years**	**Total notional amounts**	**Trading**	**ALM**	Trading	ALM [(1)]
Interest rate derivatives								
Over-the-counter								
Forward rate agreements	**$ 10,565**	**$ 506**	**$ –**	**$ 11,071**	**$ 8,591**	**$ 2,480**	$ 5,925	$ 464
Centrally cleared forward rate agreements	**284,672**	**35,446**	**–**	**320,118**	**320,118**	**–**	273,528	–
Swap contracts	**69,635**	**169,947**	**76,013**	**315,595**	**275,418**	**40,177**	242,620	52,077
Centrally cleared swap contracts	**1,377,618**	**1,308,226**	**450,208**	**3,136,052**	**2,780,206**	**355,846**	2,264,721	308,915
Purchased options	**9,788**	**4,046**	**1,407**	**15,241**	**12,883**	**2,358**	8,697	3,091
Written options	**10,152**	**4,711**	**818**	**15,681**	**14,670**	**1,011**	10,417	1,841
	1,762,430	**1,522,882**	**528,446**	**3,813,758**	**3,411,886**	**401,872**	2,805,908	366,388
Exchange-traded								
Futures contracts	**113,047**	**25,633**	**213**	**138,893**	**136,627**	**2,266**	99,156	2,148
Purchased options	**14,613**	**3**	**–**	**14,616**	**14,616**	**–**	7,273	–
Written options	**5,755**	**3**	**–**	**5,758**	**5,758**	**–**	2,500	–
	113,415	**25,639**	**213**	**159,267**	**157,001**	**2,266**	108,929	2,148
Total interest rate derivatives	**1,895,845**	**1,548,521**	**528,659**	**3,973,025**	**3,568,887**	**404,138**	2,914,837	368,536
Foreign exchange derivatives								
Over-the-counter								
Forward contracts	**892,730**	**10,961**	**1,266**	**904,957**	**892,117**	**12,840**	387,509	21,189
Swap contracts	**338,753**	**72,274**	**32,745**	**443,772**	**398,262**	**45,510**	299,073	59,209
Purchased options	**17,823**	**1,408**	**54**	**19,285**	**19,285**	**–**	20,562	2
Written options	**22,243**	**1,684**	**20**	**23,947**	**23,947**	**–**	22,513	30
	1,271,549	**86,327**	**34,085**	**1,391,961**	**1,333,611**	**58,350**	729,657	80,430
Exchange-traded								
Futures contracts	**26**	**–**	**–**	**26**	**26**	**–**	11	–
Total foreign exchange derivatives	**1,271,575**	**86,327**	**34,085**	**1,391,987**	**1,333,637**	**58,350**	729,668	80,430
Credit derivatives								
Over-the-counter								
Total return swap contracts – protection sold	**–**	**–**	**–**	**–**	**–**	**–**	–	–
Credit default swap contracts – protection purchased	**65**	**600**	**377**	**1,042**	**940**	**102**	634	125
Centrally cleared credit default swap contracts – protection purchased	**–**	**835**	**296**	**1,131**	**973**	**158**	443	158
Credit default swap contracts – protection sold	**177**	**201**	**–**	**378**	**328**	**50**	157	102
Centrally cleared credit default swap contracts – protection sold	**–**	**33**	**148**	**181**	**181**	**–**	211	–
Total credit derivatives	**242**	**1,669**	**821**	**2,732**	**2,422**	**310**	1,445	385
Equity derivatives								
Over-the-counter	**59,325**	**18,350**	**428**	**78,103**	**74,756**	**3,347**	100,762	1,484
Exchange-traded	**71,094**	**18,272**	**163**	**89,529**	**89,529**	**–**	82,038	–
Total equity derivatives	**130,419**	**36,622**	**591**	**167,632**	**164,285**	**3,347**	182,800	1,484
Precious metal derivatives								
Over-the-counter	**9,445**	**369**	**–**	**9,814**	**9,814**	**–**	4,899	–
Exchange-traded	**3,214**	**21**	**–**	**3,235**	**3,235**	**–**	1,091	–
Total precious metal derivatives	**12,659**	**390**	**–**	**13,049**	**13,049**	**–**	5,990	–
Other commodity derivatives								
Over-the-counter	**18,229**	**16,061**	**2,529**	**36,819**	**36,819**	**–**	33,261	–
Centrally cleared commodity derivatives	**59**	**43**	**–**	**102**	**102**	**–**	29	–
Exchange-traded	**14,552**	**8,245**	**289**	**23,086**	**23,086**	**–**	26,952	–
Total other commodity derivatives	**32,840**	**24,349**	**2,818**	**60,007**	**60,007**	**–**	60,242	–
Total notional amount of which:	**$ 3,343,580**	**$ 1,697,878**	**$ 566,974**	**$ 5,608,432**	**$ 5,142,287**	**$ 466,145**	$ 3,894,982	$ 450,835
Over-the-counter [(2)]	**3,121,279**	**1,645,701**	**566,309**	**5,333,289**	**4,869,410**	**463,879**	3,675,961	448,687
Exchange-traded	**222,301**	**52,177**	**665**	**275,143**	**272,877**	**2,266**	219,021	2,148

(1) Certain prior period amounts have been revised from those previously presented.

(2) For OTC derivatives that are not centrally cleared, $1,596.7 billion (2018: $1,064.5 billion) are with counterparties that have two-way collateral posting arrangements, $94.2 billion (2018: $33.8 billion) are with counterparties that have one-way collateral posting arrangements, and $184.8 billion (2018: $185.8 billion) are with counterparties that have no collateral posting arrangements. All counterparties with whom we have one-way collateral posting arrangements are sovereign entities.

Risk

In the following sections, we discuss the risks related to the use of derivatives and how we manage these risks.

Market risk

Derivatives are financial instruments where valuation is linked to changes in interest rates, foreign exchange rates, equity, commodity, credit prices or indices. Changes in value as a result of the aforementioned risk factors is referred to as market risk.

Market risk arising from derivative trading activities is managed in order to mitigate risk in line with CIBC's risk appetite. To manage market risk, we set market risk limits and may enter into hedging transactions.

Credit risk

Credit risk arises from the potential for a counterparty to default on its contractual obligations and the possibility that prevailing market conditions are such that a loss would occur in replacing the defaulted transaction.

We limit the credit risk of OTC derivatives through the use of ISDA master netting agreements, collateral, CCPs and other credit mitigation techniques. We clear eligible derivatives through CCPs in accordance with various global initiatives. Where feasible, we novate existing bilaterally negotiated and settled derivatives to a CCP in an effort to reduce CIBC's credit risk exposure. We establish counterparty credit limits and limits for CCP exposures based on a counterparty's creditworthiness and the type of trading relationship with each counterparty (underlying agreements, business volumes, product types, tenors, etc.).

We negotiate netting agreements to contain the build-up of credit exposure resulting from multiple transactions with more active counterparties. Such agreements provide for the simultaneous close-out and netting of all transactions with a counterparty, in the case of a counterparty default. A number of these agreements incorporate a Credit Support Annex, which is a bilateral security agreement that, among other things, provides for the exchange of collateral between parties in the event that one party's exposure to the other exceeds agreed upon thresholds.

Written OTC options, including CDS, generally have no credit risk for the writer if the counterparty has already performed in accordance with the terms of the contract through payment of the premium at inception. These written options will, however, have some credit risk to the extent of any unpaid premiums.

Credit risk on exchange-traded futures and options is limited, as these transactions are standardized contracts executed on established exchanges, whose CCPs assume the obligations of both counterparties. Similarly, swaps that are centrally cleared represent limited credit risk because these transactions are novated to the CCP, which assumes the obligations of the original bilateral counterparty. All exchange-traded and centrally cleared contracts are subject to initial margin and daily settlement of variation margins, designed to protect participants from losses incurred from a counterparty default.

A CVA is determined using the fair value based exposure we have on derivative contracts. We believe that we have made appropriate fair value adjustments to date. The establishment of fair value adjustments involves estimates that are based on accounting processes and judgments by management. We evaluate the adequacy of the fair value adjustments on an ongoing basis. Market and economic conditions relating to derivative counterparties may change in the future, which could result in significant future losses.

The following table summarizes our credit exposure arising from derivatives, which includes the current replacement cost, credit equivalent amount and risk-weighted amount. In 2019, we prospectively adopted the Standardized Approach for Counterparty Credit Risk (SA-CCR) for the determination of capital requirements relating to counterparty credit risk, which impacted the calculation of replacement cost, credit equivalent amount and risk-weighted assets, as summarized below.

The current replacement cost is the estimated cost to replace all contracts that have a positive market value, representing an unrealized gain to us. The replacement cost of an instrument is dependent upon its terms relative to prevailing market prices, and will fluctuate as market prices change and as the derivative approaches its scheduled maturity. Beginning in 2019, replacement cost also includes the impact of certain collateral amounts and the impact of master netting agreements. Prior to 2019, these amounts were previously excluded from this calculation.

Beginning in 2019, the credit equivalent amount is calculated as the sum of replacement cost and the potential future exposure, multiplied by an alpha of 1.4, and is reduced by CVA losses. Prior to 2019, the credit equivalent amount was the sum of the current replacement cost and the potential credit exposure, adjusted for master netting agreements and the impact of collateral. The potential credit exposure was an estimate of the amount by which the current replacement cost could increase over the remaining term of each transaction, based on a formula prescribed by OSFI. The credit equivalent amount was then multiplied by counterparty risk variables to arrive at the risk-weighted amount. The risk-weighted amount is used in determining the regulatory capital requirements for derivatives.

$ millions, as at October 31				**2019 (1)**						2018
	Current replacement cost			**Credit equivalent amount**	**Risk-weighted amount**	Current replacement cost			Credit equivalent amount	Risk-weighted amount
	Trading	**ALM**	**Total**			Trading	ALM	Total		
Interest rate derivatives										
Over-the-counter										
Forward rate agreements	**$ –**	**$ 13**	**$ 13**	**$ 69**	**$ 9**	$ 113	$ –	$ 113	$ 39	$ 2
Swap contracts	**2,503**	**155**	**2,658**	**7,140**	**2,507**	4,603	773	5,376	5,359	539
Purchased options	**17**	**–**	**17**	**87**	**67**	92	11	103	20	8
	2,520	**168**	**2,688**	**7,296**	**2,583**	4,808	784	5,592	5,418	549
Exchange-traded	**4**	**–**	**4**	**192**	**5**	1	–	1	170	5
	2,524	**168**	**2,692**	**7,488**	**2,588**	4,809	784	5,593	5,588	554
Foreign exchange derivatives										
Over-the-counter										
Forward contracts	**939**	**4**	**943**	**7,136**	**1,737**	2,916	117	3,033	3,793	1,017
Swap contracts	**735**	**4**	**739**	**3,546**	**687**	4,825	1,205	6,030	4,528	886
Purchased options	**84**	**–**	**84**	**471**	**143**	240	–	240	259	83
	1,758	**8**	**1,766**	**11,153**	**2,567**	7,981	1,322	9,303	8,580	1,986
Credit derivatives										
Over-the-counter										
Credit default swap contracts										
– protection purchased	**2**	**1**	**3**	**25**	**7**	115	–	115	46	9
– protection sold	**–**	**–**	**–**	**2**	**2**	3	–	3	3	–
	2	**1**	**3**	**27**	**9**	118	–	118	49	9
Equity derivatives										
Over-the-counter	**265**	**5**	**270**	**4,832**	**1,018**	1,951	7	1,958	2,259	535
Exchange-traded	**682**	**–**	**682**	**3,593**	**103**	1,659	–	1,659	4,131	116
	947	**5**	**952**	**8,425**	**1,121**	3,610	7	3,617	6,390	651
Precious metal derivatives										
Over-the-counter	**51**	**–**	**51**	**332**	**115**	63	–	63	62	23
Exchange-traded	**4**	**–**	**4**	**171**	**7**	143	–	143	17	1
	55	**–**	**55**	**503**	**122**	206	–	206	79	24
Other commodity derivatives										
Over-the-counter	**697**	**62**	**759**	**3,928**	**1,195**	2,527	–	2,527	4,046	1,523
Exchange-traded	**9**	**–**	**9**	**1,200**	**48**	67	–	67	1,480	59
	706	**62**	**768**	**5,128**	**1,243**	2,594	–	2,594	5,526	1,582
Non-trade exposure related to central counterparties					**245**					224
Common equity tier 1 (CET1) CVA charge					**6,990**					4,236
Total derivatives before netting	**5,992**	**244**	**6,236**	**32,724**	**14,885**	19,318	2,113	21,431	26,212	9,266
Less: effect of netting			**n/a**					(11,789)		
Total derivatives			**$ 6,236**	**$ 32,724**	**$ 14,885**			$ 9,642	$ 26,212	$ 9,266

(1) In 2019, we adopted SA-CCR for the determination of capital requirements relating to counterparty credit risk, which impacted the calculation of replacement cost, credit equivalent amount and risk-weighted assets. Comparative amounts presented have not been restated.
n/a Not applicable.

The following table presents the current replacement cost of derivatives by geographic region based on the location of the derivative counterparty:

$ millions, as at October 31			**2019**					2018 (1)
	Canada	**U.S.**	**Other countries**	**Total**	Canada	U.S.	Other countries	Total
Derivative instruments								
By counterparty type								
Financial institutions	**$ 534**	**$ 1,063**	**$ 549**	**$ 2,146**	$ 4,864	$ 5,206	$ 4,947	$ 15,017
Governments	**891**	**–**	**8**	**899**	3,361	–	9	3,370
Corporate	**951**	**1,017**	**1,223**	**3,191**	1,268	993	783	3,044
	2,376	**2,080**	**1,780**	**6,236**	9,493	6,199	5,739	21,431
Less: effect of netting	**n/a**	**n/a**	**n/a**	**n/a**	(5,673)	(3,252)	(2,864)	(11,789)
Total derivative instruments	**$ 2,376**	**$ 2,080**	**$ 1,780**	**$ 6,236**	$ 3,820	$ 2,947	$ 2,875	$ 9,642

(1) Prior period amounts have been restated to include exchange-traded derivatives to align to the current period presentation.
n/a Not applicable.

Note 13 | Designated accounting hedges

Hedge accounting

We apply hedge accounting as part of managing the market risk of certain non-trading portfolios arising from changes due to interest rates, foreign exchange rates, and equity market prices. Please see the shaded sections of "Non-trading activities" on page 66 of the MD&A for further information on our risk management strategy for these risks. See Note 12 for further information on the derivatives used by CIBC.

Interest rate risk

The majority of our derivative contracts used to hedge certain exposures to benchmark interest rate risk are interest rate swaps. For fair value hedges, we convert our fixed interest rate exposures from the hedged financial instruments to floating interest rate exposures. For cash flow hedges, we convert certain exposures to cash flow variability from our variable rate instruments to fixed interest rate exposures.

Foreign currency risk

For our fair value hedges, we mainly use various combinations of cross-currency interest rate swaps and interest rate swaps to hedge our exposures to foreign currency risk together with interest rate risk, converting our fixed foreign currency rate exposures to floating functional currency rate exposures.

For our cash flow hedges, the majority of our derivative contracts are used to hedge our exposures to cash flow variability arising from fluctuations in foreign exchange rates, and mainly consist of cross-currency interest rate swaps. We also use foreign exchange forwards and synthetic forwards created from interest rate swaps to hedge certain foreign currency contractual expenses.

For NIFO hedges, we use a combination of foreign denominated deposit liabilities and foreign exchange forwards to manage our foreign currency exposure of our NIFOs with a functional currency other than the Canadian dollar.

Equity price risk

We use cash-settled total return swaps in designated cash flow hedge relationships to hedge changes in CIBC's share price in respect of certain cash-settled share-based compensation awards. Note 17 provides details on our cash-settled share-based compensation plans.

For the hedge relationships above, hedge effectiveness is assessed at the inception of the hedge relationship and on an ongoing basis, primarily using the dollar offset method. The sources of hedge ineffectiveness are mainly attributed to the following:

- Utilization of hedging instruments that have a non-zero fair value at the inception of the hedge relationship;
- Differences in fixed rates, when contractual coupons of the fixed rate hedged items are designated;
- Differences in the discounting factors between the hedged item and the hedging instruments arising from different rate reset frequencies and timing of cash flows; and
- Differences in the discount curves to determine the basis adjustments of the hedged items and the fair value of the hedging derivatives, including from the application of OIS and CVA to the valuation of derivatives when they are applicable.

Designated hedging instruments

The following table provides a summary of financial instruments designated as hedging instruments:

$ millions, as at October 31		Notional amount of the hedging instrument [1]	Maturity range			Fair value of the hedging derivatives		Gains (losses) on changes in fair value used for calculating hedge ineffectiveness
			Less than 1 year	1-5 years	Over 5 years	Assets	Liabilities	
2019	**Cash flow hedges**							
	Foreign exchange risk							
	Foreign exchange forwards	**$ 17**	**$ 17**	**$ –**	**$ –**	**$ –**	**$ –**	**$ (7)**
	Cross-currency interest rate swaps	**6,619**	**859**	**5,760**	**–**	**104**	**177**	**(168)**
	Interest rate risk							
	Interest rate swaps	**18,180**	**3,122**	**15,058**	**–**	**4**	**–**	**193**
	Equity share price risk							
	Equity swaps	**1,203**	**1,030**	**173**	**–**	**93**	**–**	**(1)**
		$ 26,019	**$ 5,028**	**$ 20,991**	**$ –**	**$ 201**	**$ 177**	**$ 17**
	NIFO hedges							
	Foreign exchange risk							
	Foreign exchange forwards	**$ 598**	**$ 598**	**$ –**	**$ –**	**$ 7**	**$ 2**	**$ –**
	Deposits [2]	**17,616**	**17,616**	**–**	**–**	**n/a**	**n/a**	**6**
		$ 18,214	**$ 18,214**	**$ –**	**$ –**	**$ 7**	**$ 2**	**$ 6**
	Fair value hedges							
	Interest rate risk							
	Interest rate swaps	**$ 194,398**	**$ 63,723**	**$ 114,455**	**$ 16,220**	**$ 291**	**$ 219**	**$ (276)**
	Foreign exchange / interest rate risk							
	Cross-currency interest rate swaps	**34,627**	**7,226**	**20,597**	**6,804**	**339**	**682**	**41**
	Interest rate swaps	**16,477**	**2,937**	**10,158**	**3,382**	**155**	**–**	**142**
		$ 245,502	**$ 73,886**	**$ 145,210**	**$ 26,406**	**$ 785**	**$ 901**	**$ (93)**
		$ 289,735	**$ 97,128**	**$ 166,201**	**$ 26,406**	**$ 993**	**$ 1,080**	**$ (70)**
2018	**Cash flow hedges**							
	Foreign exchange risk							
	Foreign exchange forwards	$ 138	$ 138	$ –	$ –	$ 2	$ –	$ (5)
	Cross-currency interest rate swaps	18,421	13,377	5,044	–	351	234	82
	Interest rate risk							
	Interest rate swaps	4,468	395	4,073	–	–	15	(57)
	Equity share price risk							
	Equity swaps	1,406	173	1,233	–	–	89	26
		$ 24,433	$ 14,083	$ 10,350	$ –	$ 353	$ 338	$ 46
	NIFO hedges							
	Foreign exchange risk							
	Foreign exchange forwards	$ 193	$ 193	$ –	$ –	$ 11	$ 6	$ (4)
	Deposits [2]	17,158	17,158	–	–	n/a	n/a	(388)
		$ 17,351	$ 17,351	$ –	$ –	$ 11	$ 6	$ (392)
	Fair value hedges							
	Interest rate risk							
	Interest rate swaps	$ 174,556	$ 50,347	$ 110,948	$ 13,261	$ 380	$ 164	$ (36)
	Foreign exchange / interest rate risk							
	Cross-currency interest rate swaps	36,308	15,528	19,267	1,513	799	795	(63)
	Interest rate swaps	17,310	3,850	12,817	643	23	–	(15)
		$ 228,174	$ 69,725	$ 143,032	$ 15,417	$ 1,202	$ 959	$ (114)
		$ 269,958	$ 101,159	$ 153,382	$ 15,417	$ 1,566	$ 1,303	$ (460)

(1) For some hedge relationships, we apply a combination of derivatives to hedge the underlying exposures, therefore, the notional amounts of the derivatives generally exceed the carrying amount of the hedged items.
(2) Notional amount represents the principal amount of deposits as at October 31, 2019 and October 31, 2018.
n/a Not applicable.

The following table provides the average rate or price of the hedging derivatives:

As at October 31				Average exchange rate (1)		Average fixed interest rate (1)	Average share price
2019	**Cash flow hedges**						
	Foreign exchange risk						
		Foreign exchange forwards	USD – CAD	**1.32**		**n/a**	**n/a**
		Cross-currency interest rate swaps	AUD – CAD	**0.99**		**n/a**	**n/a**
			EUR – CAD	**1.51**		**n/a**	**n/a**
			GBP – CAD	**1.66**		**n/a**	**n/a**
			USD – CAD	**1.32**		**n/a**	**n/a**
	Interest rate risk						
		Interest rate swaps		**n/a**	CAD	**2.10 %**	**n/a**
				n/a	USD	**1.62 %**	**n/a**
	Equity share price risk						
		Equity swaps		**n/a**		**n/a**	**$ 108.59**
	NIFO hedges						
	Foreign exchange risk						
		Foreign exchange forwards	AUD – CAD	**0.90**		**n/a**	**n/a**
			HKD – CAD	**0.17**		**n/a**	**n/a**
			USD – CAD	**1.31**		**n/a**	**n/a**
	Fair value hedges						
	Interest rate risk						
		Interest rate swaps		**n/a**	CAD	**1.93 %**	**n/a**
	Foreign exchange / interest rate risk						
		Cross-currency interest rate swaps	EUR – CAD	**1.30**		**0.12 %**	**n/a**
			GBP – CAD	**1.65**		**1.06 %**	**n/a**
			USD – CAD	**1.32**		**1.61 %**	**n/a**
		Interest rate swaps		**n/a**	EUR	**0.08 %**	**n/a**
				n/a	GBP	**0.71 %**	**n/a**
2018	**Cash flow hedges**						
	Foreign exchange risk						
		Foreign exchange forwards	USD – CAD	1.29		n/a	n/a
		Cross-currency interest rate swaps	EUR – CAD	1.51		n/a	n/a
			GBP – CAD	1.72		n/a	n/a
			USD – CAD	1.28		n/a	n/a
	Interest rate risk						
		Interest rate swaps		n/a	CAD	2.45 %	n/a
				n/a	USD	2.16 %	n/a
	Equity share price risk						
		Equity swaps		n/a		n/a	$ 109.52
	NIFO hedges						
	Foreign exchange risk						
		Foreign exchange forwards	AUD – CAD	0.93		n/a	n/a
			HKD – CAD	0.17		n/a	n/a
			JPY – CAD	0.01		n/a	n/a
	Fair value hedges						
	Interest rate risk						
		Interest rate swaps		n/a	CAD	1.84 %	n/a
	Foreign exchange / interest rate risk						
		Cross-currency interest rate swaps	EUR – CAD	1.49		0.10 %	n/a
			GBP – CAD	1.60		1.06 %	n/a
			USD – CAD	1.30		2.36 %	n/a
		Interest rate swaps		n/a	EUR	0.05 %	n/a
				n/a	GBP	0.78 %	n/a

(1) Includes average foreign exchange rates and interest rates relating to significant hedging relationships.
n/a Not applicable.

Designated hedged items

The following table provides information on designated hedged items:

$ millions, as at or for the year ended October 31		Carrying amount of the hedged item		Accumulated amount of fair value hedge adjustments on the hedged item		Gains (losses) on change in fair value used for calculating hedge ineffectiveness
		Assets	Liabilities	Assets	Liabilities	
2019	**Cash flow hedges** (1)					
	Foreign exchange risk					
	Forecasted expenses	**n/a**	**n/a**	**n/a**	**n/a**	**$ 7**
	Deposits	**$ –**	**$ 2,860**	**n/a**	**n/a**	**168**
	Interest rate risk	**–**	**–**	**n/a**	**n/a**	**–**
	Loans	**18,169**	**–**	**n/a**	**n/a**	**(193)**
	Equity share price risk	**–**	**–**	**n/a**	**n/a**	**–**
	Share-based payment	**–**	**1,169**	**n/a**	**n/a**	**1**
		$ 18,169	**$ 4,029**	**n/a**	**n/a**	**$ (17)**
	NIFO hedges	**$ 18,214**	**$ –**	**n/a**	**n/a**	**$ (6)**
	Fair value hedges (2)					
	Interest rate risk					
	Securities	**$ 25,763**	**$ –**	**$ 633**	**$ –**	**$ 1,013**
	Loans	**62,987**	**–**	**132**	**–**	**1,151**
	Deposits	**–**	**84,173**	**–**	**533**	**(1,750)**
	Subordinated indebtedness	**–**	**3,761**	**–**	**89**	**(137)**
	Foreign exchange / interest rate risk					
	Loans	**6**	**–**	**–**	**–**	**–**
	Deposits	**–**	**17,222**	**–**	**57**	**(180)**
		$ 88,756	**$ 105,156**	**$ 765**	**$ 679**	**$ 97**
2018	**Cash flow hedges** (1)					
	Foreign exchange risk					
	Forecasted expenses	n/a	n/a	n/a	n/a	$ 5
	Deposits	$ –	$ 13,456	n/a	n/a	(81)
	Interest rate risk					
	Loans	4,463	–	n/a	n/a	57
	Equity share price risk					
	Share-based payment	–	1,186	n/a	n/a	(27)
		$ 4,463	$ 14,642	n/a	n/a	$ (46)
	NIFO hedges	$ 17,351	$ –	n/a	n/a	$ 392
	Fair value hedges (2)					
	Interest rate risk					
	Securities	$ 17,046	$ –	$ (370)	$ –	$ (338)
	Loans	61,363	–	(1,036)	–	(626)
	Deposits	–	72,839	–	(1,205)	907
	Subordinated indebtedness	–	3,893	–	(48)	58
	Foreign exchange / interest rate risk					
	Loans	6	–	–	–	–
	Deposits	–	19,844	–	(112)	82
		$ 78,415	$ 96,576	$ (1,406)	$ (1,365)	$ 83

(1) As at October 31, 2019, the amount remaining in AOCI related to discontinued cash flow hedges was immaterial (2018: immaterial).
(2) As at October 31, 2019, the accumulated fair value hedge net liability adjustment remaining on the consolidated balance sheet related to discontinued fair value hedges was $112 million (2018: $153 million).
n/a Not applicable.

Hedge accounting gains (losses) on the consolidated statement of income and consolidated statement of comprehensive income

$ millions, for the year ended October 31		Beginning balance of AOCI – hedge reserve (after-tax)	Change in the value of the hedging instrument recognized in OCI (before-tax)	Amount reclassified from accumulated OCI to income (before-tax) [1]	Tax benefit (expense)	Ending balance of AOCI hedge reserve (after-tax)	Hedge ineffectiveness gains (losses) recognized in income
2019	**Cash flow hedges**						
	Foreign exchange risk	**$ 5**	**$ (1)**	**$ (8)**	**$ 2**	**$ (2)**	**$ –**
	Interest rate risk	**(45)**	**188**	**6**	**(51)**	**98**	**–**
	Equity share price risk	**22**	**(1)**	**(6)**	**2**	**17**	**–**
		$ (18)	**$ 186**	**$ (8)**	**$(47)**	**$ 113**	**$ –**
	NIFO hedges – foreign exchange risk						
	Hedges of net investment in foreign operations	**$ (1,129)**	**$ 6**	**$ –**	**$(16)**	**$(1,139)**	**$ –**
2018	**Cash flow hedges**						
	Foreign exchange risk	$ 5	$ 6	$ (6)	$ –	$ 5	$ –
	Interest rate risk	(3)	(56)	(2)	16	(45)	–
	Equity share price risk	31	17	(27)	1	22	(1)
		$ 33	$ (33)	$ (35)	$ 17	$ (18)	$ (1)
	NIFO hedges – foreign exchange risk						
	Hedges of net investment in foreign operations	$ (780)	$(392)	$ –	$ 43	$(1,129)	$ –

(1) During the year ended October 31, 2019, the amount reclassified from AOCI to net income for cash flow hedges of forecasted transactions that were no longer expected to occur was immaterial (2018: nil).

$ millions, for the year ended October 31		Gains (losses) on the hedging instruments	Gains (losses) on the hedged items attributable to hedged risk	Hedge ineffectiveness gains (losses) recognized in income
2019	**Fair value hedges**			
	Interest rate risk	**$ (276)**	**$ 277**	**$ 1**
	Foreign exchange / interest rate risk	**183**	**(180)**	**3**
		$ (93)	**$ 97**	**$ 4**
2018	**Fair value hedges**			
	Interest rate risk	$ (36)	$ 1	$ (35)
	Foreign exchange / interest rate risk	(78)	82	4
		$ (114)	$ 83	$ (31)

The following table presents hedge ineffectiveness gains (losses) recognized in the consolidated statement of income for 2017:

$ millions, for the year ended October 31	2017
Fair value hedges [1]	
Gains (losses) on hedging instruments	$ (24)
Gains (losses) on hedged items attributable to hedged risks	73
	$ 49
Cash flow hedges [2][3]	$ –

(1) Recognized in Net interest income.
(2) Recognized in Non-interest income – Other and Non-interest expenses – Other.
(3) Includes NIFO hedges.

Portions of derivative gains (losses) that by designation were excluded from the assessment of hedge effectiveness for fair value, cash flow, and NIFO hedging activities are included in the consolidated statement of income, and are not significant for the year ended October 31, 2017.

Note 14 | Subordinated indebtedness

The debt issues included in the table below are outstanding unsecured obligations of CIBC and its subsidiaries and are subordinated to the claims of depositors and other creditors as set out in their terms. Foreign currency denominated indebtedness funds foreign currency denominated assets (including our NIFOs). All redemptions are subject to regulatory approval.

Terms of subordinated indebtedness

$ millions, as at October 31						2019		2018
		Earliest date redeemable						
Interest rate %	Contractual maturity date	At greater of Canada Yield Price (1) and par	At par	Denominated in foreign currency	**Par value**	**Carrying value (2)**	Par value	Carrying value (2)
5.75 (3)	July 11, 2024 (4)			TT$175 million	**$ 34**	**$ 34**	$ 34	$ 34
3.00 (5)(6)	October 28, 2024		October 28, 2019 (7)		**–**	**–**	1,000	986
3.42 (6)(8)	January 26, 2026		January 26, 2021		**1,000**	**991**	1,000	966
3.45 (6)(9)	April 4, 2028		April 4, 2023		**1,500**	**1,533**	1,500	1,479
8.70	May 25, 2029 (4)				**25**	**40**	25	38
2.95 (6)(10)	June 19, 2029		June 19, 2024		**1,500**	**1,494**	–	–
11.60	January 7, 2031	January 7, 1996			**200**	**200**	200	178
10.80	May 15, 2031	May 15, 2021			**150**	**149**	150	132
8.70	May 25, 2032 (4)				**25**	**42**	25	39
8.70	May 25, 2033 (4)				**25**	**44**	25	40
8.70	May 25, 2035 (4)				**25**	**46**	25	42
Floating (11)	July 31, 2084		July 27, 1990	US$65 million (12)	**85**	**85**	86	86
Floating (13)	August 31, 2085		August 20, 1991	US$17 million	**23**	**23**	23	23
					4,592	**4,681**	4,093	4,043
Subordinated indebtedness sold short (held) for trading purposes					**3**	**3**	37	37
					$ 4,595	**$ 4,684**	$ 4,130	$ 4,080

(1) Canada Yield Price: a price calculated at the time of redemption to provide a yield to maturity equal to the yield of a Government of Canada bond of appropriate maturity plus a pre-determined spread.
(2) Carrying values of fixed-rate subordinated indebtedness notes reflect the impact of interest rate hedges in an effective hedge relationship.
(3) Guaranteed Subordinated Term Notes in Trinidad and Tobago dollars issued on July 11, 2018 by FirstCaribbean International Bank (Trinidad & Tobago) Limited, a subsidiary of CIBC FirstCaribbean, and guaranteed on a subordinated basis by CIBC FirstCaribbean.
(4) Not redeemable prior to maturity date.
(5) Interest rate is fixed at the indicated rate until the earliest date redeemable at par by CIBC and, thereafter, at a rate of 1.19% above the three-month Canadian dollar bankers' acceptance rate.
(6) Debentures are also subject to a non-viability contingent capital (NVCC) provision, necessary for the Debentures to qualify as Tier 2 regulatory capital under Basel III. As such, the Debentures are automatically converted into common shares upon the occurrence of a Trigger Event as described in the capital adequacy guidelines. In such an event, the Debentures are convertible into a number of common shares, determined by dividing 150% of the par value plus accrued and unpaid interest by the average common share price (as defined in the relevant prospectus supplements) subject to a minimum price of $5.00 per share (subject to adjustment in certain events as defined in the relevant prospectus supplements).
(7) On October 28, 2019, we redeemed all $1.0 billion of our 3.00% Debentures due October 28, 2024. In accordance with their terms, the Debentures were redeemed at 100% of their principal amount, plus accrued and unpaid interest thereon.
(8) Interest rate is fixed at the indicated rate until the earliest date redeemable at par by CIBC and, thereafter, at a rate of 2.57% above the three-month Canadian dollar bankers' acceptance rate.
(9) Interest rate is fixed at the indicated rate until the earliest date redeemable at par by CIBC and, thereafter, at a rate of 1.00% above the three-month Canadian dollar bankers' acceptance rate.
(10) Interest rate is fixed at the indicated rate until the earliest date redeemable at par by CIBC and, thereafter, at a rate of 1.18% above the three-month Canadian dollar bankers' acceptance rate.
(11) Interest rate is based on the six-month US$ London Interbank Offered Rate (LIBOR) plus 0.25%.
(12) US$1 million (2018: nil) of this issue was repurchased and cancelled during the year.
(13) Interest rate is based on the six-month US$ LIBOR plus 0.125%.

Note 15 | Common and preferred share capital

The following table presents the outstanding number of shares and dividends paid:

Outstanding shares and dividends paid

$ millions, except number of shares and per share amounts, as at or for the year ended October 31				2019				2018				2017
	Shares outstanding		**Dividends paid**		Shares outstanding		Dividends paid		Shares outstanding		Dividends paid	
	Number of shares	**Amount**	**Amount**	**$ per share**	Number of shares	Amount	Amount	$ per share	Number of shares	Amount	Amount	$ per share
Common shares	**445,325,744**	**$ 13,589**	**$ 2,488**	**$ 5.60**	442,823,361	$ 13,242	$ 2,356	$ 5.32	439,329,713	$ 12,550	$ 2,121	$ 5.08
Class A Preferred Shares												
Series 39	**16,000,000**	**400**	**16**	**0.96**	16,000,000	400	16	0.98	16,000,000	400	16	0.98
Series 41	**12,000,000**	**300**	**11**	**0.94**	12,000,000	300	11	0.94	12,000,000	300	11	0.94
Series 43	**12,000,000**	**300**	**11**	**0.90**	12,000,000	300	11	0.90	12,000,000	300	11	0.90
Series 45	**32,000,000**	**800**	**35**	**1.10**	32,000,000	800	35	1.10	32,000,000	800	14	0.46
Series 47	**18,000,000**	**450**	**20**	**1.13**	18,000,000	450	16	0.88	–	–	–	–
Series 49	**13,000,000**	**325**	**13**	**1.00**	–	–	–	–	–	–	–	–
Series 51	**10,000,000**	**250**	**5**	**0.53**	–	–	–	–	–	–	–	–
		$ 2,825	**$ 111**			$ 2,250	$ 89			$ 1,800	$ 52	
Treasury shares – common shares	**15,931**	**$ 2**			3,019	$ 1			(16,410)	$ (2)		
Treasury shares – preferred shares	**–**	**–**			–	–			(116,671)	(3)		

Common shares

CIBC's authorized capital consists of an unlimited number of common shares, without nominal or par value.

Common shares issued

$ millions, except number of shares, as at or for the year ended October 31	**2019**		2018		2017	
	Number of shares	**Amount**	Number of shares	Amount	Number of shares	Amount
Balance at beginning of year	**442,826,380**	**$ 13,243**	439,313,303	$ 12,548	397,070,280	$ 8,026
Issuance pursuant to:						
Acquisition of The PrivateBank	**–**	**–**	1,689,450	194	32,137,402	3,443
Acquisition of Geneva Advisors	**–**	**–**	–	–	1,204,344	126
Acquisition of Wellington Financial	**–**	**–**	378,848	47	–	–
Equity-settled share-based compensation plans	**511,567**	**52**	999,675	95	990,934	91
Shareholder investment plan [(1)]	**1,777,738**	**194**	2,880,782	337	6,870,584	749
Employee share purchase plan	**1,213,078**	**131**	1,044,893	123	1,071,051	117
	446,328,763	**$ 13,620**	446,306,951	$ 13,344	439,344,595	$ 12,552
Purchase of common shares for cancellation	**(1,000,000)**	**(30)**	(3,500,000)	(104)	–	–
Treasury shares	**12,912**	**1**	19,429	3	(31,292)	(4)
Balance at end of year [(2)]	**445,341,675**	**$ 13,591**	442,826,380	$ 13,243	439,313,303 [(3)]	$ 12,548

(1) Commencing with the dividends paid on April 27, 2018, the shares for the Dividend Reinvestment Option and the Stock Dividend Option of the Shareholder Investment Plan (the Plan) were issued from Treasury without discount. Prior to this, these shares were issued at a 2% discount from average market price. The participants in the Share Purchase Option of the Plan continue to receive shares issued from Treasury with no discount.
(2) Excludes nil restricted shares as at October 31, 2019 (2018: 60,764; 2017: 190,285).
(3) Excludes 2,010,890 common shares which were issued and outstanding but which had not been acquired by a third party as at October 31, 2017. These shares were issued as a component of our acquisition of The PrivateBank.

Common shares reserved for issue

As at October 31, 2019, 15,310,806 common shares (2018: 15,703,861) were reserved for future issue pursuant to stock option plans, 14,383,104 common shares (2018: 16,160,842) were reserved for future issue pursuant to the Shareholder Investment Plan, 9,772,134 common shares (2018: 3,043,087) were reserved for future issue pursuant to the employee share purchase plan and other activities, and 1,789,893,750 common shares (2018: 1,561,767,500) were reserved for future issue pursuant to instruments which include an NVCC provision requiring conversion into common shares upon the occurrence of a Trigger Event as described in the capital adequacy guidelines.

Normal course issuer bid

On May 31, 2019, we announced that the Toronto Stock Exchange (TSX) had accepted the notice of CIBC's intention to commence a normal course issuer bid. Purchases under this bid will terminate upon the earlier of: (i) CIBC purchasing up to a maximum of 9 million common shares; (ii) CIBC providing a notice of termination; or (iii) June 3, 2020. Our previous bid terminated on June 3, 2019. During the year, we purchased and cancelled 1,000,000 common shares under the current bid at an average price of $109.06 for a total amount of $109 million.

The following table shows common shares purchased and cancelled under previously expired NCIBs.

$ millions, except number of shares, as at or for the year ended October 31	**2019**		2018		2017	
TSX approval date	**Number of shares**	**Amount**	Number of shares	Amount	Number of shares	Amount
March 10, 2017 [(1)]	**–**	**$ –**	–	$ –	–	$ –
May 31, 2018 [(2)]	**–**	**–**	3,500,000	417	–	–
	–	**$ –**	3,500,000	$ 417	–	$ –

(1) No common shares were repurchased under this NCIB.
(2) Common shares were repurchased at an average price of $119.22 under this NCIB.

Preferred shares

CIBC is authorized to issue an unlimited number of Class A Preferred Shares and Class B Preferred Shares without nominal or par value, issuable in series, provided that, for each class of preferred shares, the maximum aggregate consideration for all outstanding shares, at any time does not exceed $10 billion. There are no Class B Preferred Shares currently outstanding.

Preferred share rights and privileges

Class A Preferred Shares

Each series of Class A Preferred Shares bears quarterly non-cumulative dividends. Non-cumulative Rate Reset Class A Preferred Shares Series 39, 41, 43, 45, 47, 49, and 51 (NVCC) are redeemable, subject to regulatory approval if required, for cash by CIBC on or after the specified redemption dates at the cash redemption prices indicated in the terms of the preferred shares.

Non-cumulative Rate Reset Class A Preferred Shares Series 39 (NVCC) (Series 39 shares) and Non-cumulative Floating Rate Class A Preferred Shares Series 40 (NVCC) (Series 40 shares)

On June 11, 2014, we issued 16 million Series 39 shares with a par value of $25.00 per share, for gross proceeds of $400 million. For the initial five-year period to the earliest redemption date of July 31, 2019, the Series 39 shares paid quarterly cash dividends, as declared, at a rate of 3.90%. The dividend was reset to 3.713%, payable quarterly as and when declared by the Board, effective for the five-year period commencing July 31, 2019. On July 31, 2024, and on July 31 every five years thereafter, the dividend rate will reset to be equal to the then current five-year Government of Canada bond yield plus 2.32%.

Holders of the Series 39 shares had the right to convert their shares on a one-for-one basis into Series 40 shares, subject to certain conditions, on July 31, 2019. As the conditions for conversion were not met, no Series 40 shares were issued, and all of the Series 39 shares remain outstanding. Holders of the Series 39 shares will have the right to convert their shares on a one-for-one basis into Series 40 shares, subject to certain conditions, on July 31, 2024 and on July 31 every five years thereafter. Holders of the Series 40 shares will be entitled to receive a quarterly floating rate dividend, if declared, equal to the three-month Government of Canada Treasury Bill yield plus 2.32%. Holders of the then outstanding Series 40 shares may convert their shares on a one-for-one basis into Series 39 shares, subject to certain conditions, on July 31, 2029 and on July 31 every five years thereafter.

Subject to regulatory approval and certain provisions of the shares, we may redeem all or any part of the then outstanding Series 39 shares at par on July 31, 2024, and on July 31 every five years thereafter; we may redeem all or any part of the then outstanding Series 40 shares at par on July 31, 2029, and on July 31 every five years thereafter.

Non-cumulative Rate Reset Class A Preferred Shares Series 41 (NVCC) (Series 41 shares)
On December 16, 2014, we issued 12 million Series 41 shares with a par value of $25.00 per share, for gross proceeds of $300 million. For the initial five-year period to the earliest redemption date of January 31, 2020, the Series 41 shares pay quarterly cash dividends, if declared, at a rate of 3.75%. On January 31, 2020, and on January 31 every five years thereafter, the dividend rate will reset to be equal to the then current five-year Government of Canada bond yield plus 2.24%.

Holders of the Series 41 shares will have the right to convert their shares on a one-for-one basis into Non-cumulative Floating Rate Class A Preferred Shares Series 42 (NVCC) (Series 42 shares), subject to certain conditions, on January 31, 2020 and on January 31 every five years thereafter. Holders of the Series 42 shares will be entitled to receive a quarterly floating rate dividend, if declared, equal to the three-month Government of Canada Treasury Bill yield plus 2.24%. Holders of the Series 42 shares may convert their shares on a one-for-one basis into Series 41 shares, subject to certain conditions, on January 31, 2025 and on January 31 every five years thereafter.

Subject to regulatory approval and certain provisions of the shares, we may redeem all or any part of the then outstanding Series 41 shares at par on January 31, 2020 and on January 31 every five years thereafter; we may redeem all or any part of the then outstanding Series 42 shares at par on January 31, 2025 and on January 31 every five years thereafter.

Non-cumulative Rate Reset Class A Preferred Shares Series 43 (NVCC) (Series 43 shares)
On March 11, 2015, we issued 12 million Series 43 shares with a par value of $25.00 per share, for gross proceeds of $300 million. For the initial five-year period to the earliest redemption date of July 31, 2020, the Series 43 shares pay quarterly cash dividends, if declared, at a rate of 3.60%. On July 31, 2020, and on July 31 every five years thereafter, the dividend rate will reset to be equal to the then current five-year Government of Canada bond yield plus 2.79%.

Holders of the Series 43 shares will have the right to convert their shares on a one-for-one basis into Non-cumulative Floating Rate Class A Preferred Shares Series 44 (NVCC) (Series 44 shares), subject to certain conditions, on July 31, 2020 and on July 31 every five years thereafter. Holders of the Series 44 shares will be entitled to receive a quarterly floating rate dividend, if declared, equal to the three-month Government of Canada Treasury Bill yield plus 2.79%. Holders of the Series 44 shares may convert their shares on a one-for-one basis into Series 43 shares, subject to certain conditions, on July 31, 2025 and on July 31 every five years thereafter.

Subject to regulatory approval and certain provisions of the shares, we may redeem all or any part of the then outstanding Series 43 shares at par on July 31, 2020 and on July 31 every five years thereafter; we may redeem all or any part of the then outstanding Series 44 shares at par on July 31, 2025 and on July 31 every five years thereafter.

Non-cumulative Rate Reset Class A Preferred Shares Series 45 (NVCC) (Series 45 shares)
On June 2, 2017, we issued 32 million Series 45 shares with a par value of $25.00 per share, for gross proceeds of $800 million. For the initial five-year period to the earliest redemption date of July 31, 2022, the Series 45 shares pay quarterly cash dividends, if declared, at a rate of 4.40%. On July 31, 2022, and on July 31 every five years thereafter, the dividend rate will reset to be equal to the then current five-year Government of Canada bond yield plus 3.38%.

Holders of the Series 45 shares will have the right to convert their shares on a one-for-one basis into Non-cumulative Floating Rate Class A Preferred Shares Series 46 (NVCC) (Series 46 shares), subject to certain conditions, on July 31, 2022 and on July 31 every five years thereafter. Holders of the Series 46 shares will be entitled to receive a quarterly floating rate dividend, if declared, equal to the three-month Government of Canada Treasury Bill yield plus 3.38%. Holders of the Series 46 shares may convert their shares on a one-for-one basis into Series 45 shares, subject to certain conditions, on July 31, 2027 and on July 31 every five years thereafter.

Subject to regulatory approval and certain provisions of the shares, we may redeem all or any part of the then outstanding Series 45 shares at par on July 31, 2022 and on July 31 every five years thereafter; we may redeem all or any part of the then outstanding Series 46 shares at par on July 31, 2027 and on July 31 every five years thereafter.

Non-cumulative Rate Reset Class A Preferred Shares Series 47 (NVCC) (Series 47 shares)
On January 18, 2018, we issued 18 million Non-cumulative Rate Reset Class A Preferred Shares Series 47 (NVCC) (Series 47 shares) with a par value of $25.00 per share, for gross proceeds of $450 million. For the initial five-year period to the earliest redemption date of January 31, 2023, the Series 47 shares pay quarterly cash dividends, if declared, at a rate of 4.50%. On January 31, 2023, and on January 31 every five years thereafter, the dividend rate will reset to be equal to the then current five-year Government of Canada bond yield plus 2.45%.

Holders of the Series 47 shares will have the right to convert their shares on a one-for-one basis into Non-cumulative Floating Rate Class A Preferred Shares Series 48 (NVCC) (Series 48 shares), subject to certain conditions, on January 31, 2023 and on January 31 every five years thereafter. Holders of the Series 48 shares will be entitled to receive a quarterly floating rate dividend, if declared, equal to the three-month Government of Canada Treasury Bill yield plus 2.45%. Holders of the Series 48 shares may convert their shares on a one-for-one basis into Series 47 shares, subject to certain conditions, on January 31, 2028 and on January 31 every five years thereafter.

Subject to regulatory approval and certain provisions of the shares, we may redeem all or any part of the then outstanding Series 47 shares at par on January 31, 2023 and on January 31 every five years thereafter; we may redeem all or any part of the then outstanding Series 48 shares at par on January 31, 2028 and on January 31 every five years thereafter.

Non-cumulative Rate Reset Class A Preferred Shares Series 49 (NVCC) (Series 49 shares)
On January 22, 2019, we issued 13 million Non-cumulative Rate Reset Class A Preferred Shares Series 49 (NVCC) (Series 49 shares) with a par value of $25.00 per share, for gross proceeds of $325 million. For the initial five-year period to the earliest redemption date of April 30, 2024, the Series 49 shares pay quarterly cash dividends, if declared, at a rate of 5.20%. On April 30, 2024, and on April 30 every five years thereafter, the dividend rate will reset to be equal to the then current five-year Government of Canada bond yield plus 3.31%.

Holders of the Series 49 shares will have the right to convert their shares on a one-for-one basis into Non-cumulative Floating Rate Class A Preferred Shares Series 50 (NVCC) (Series 50 shares), subject to certain conditions, on April 30, 2024 and on April 30 every five years thereafter. Holders of the Series 50 shares will be entitled to receive a quarterly floating rate dividend, if declared, equal to the three-month Government of Canada Treasury Bill yield plus 3.31%. Holders of the Series 50 shares may convert their shares on a one-for-one basis into Series 49 shares, subject to certain conditions, on April 30, 2029 and on April 30 every five years thereafter.

Subject to regulatory approval and certain provisions of the shares, we may redeem all or any part of the then outstanding Series 49 shares at par on April 30, 2024 and on April 30 every five years thereafter; we may redeem all or any part of the then outstanding Series 50 shares at par on April 30, 2029 and on April 30 every five years thereafter.

Non-cumulative Rate Reset Class A Preferred Shares Series 51 (NVCC) (Series 51 shares)

On June 4, 2019, we issued 10 million Non-cumulative Rate Reset Class A Preferred Shares Series 51 (NVCC) (Series 51 shares) with a par value of $25.00 per share, for gross proceeds of $250 million. For the initial five-year period to the earliest redemption date of July 31, 2024, the Series 51 shares pay quarterly cash dividends, if declared, at a rate of 5.15%. On July 31, 2024, and on July 31 every five years thereafter, the dividend rate will reset to be equal to the then current five-year Government of Canada bond yield plus 3.62%.

Holders of the Series 51 shares will have the right to convert their shares on a one-for-one basis into Non-cumulative Floating Rate Class A Preferred Shares Series 52 (NVCC) (Series 52 shares), subject to certain conditions, on July 31, 2024 and on July 31 every five years thereafter. Holders of the Series 52 shares will be entitled to receive a quarterly floating rate dividend, if declared, equal to the three-month Government of Canada Treasury Bill yield plus 3.62%. Holders of the Series 52 shares may convert their shares on a one-for-one basis into Series 51 shares, subject to certain conditions, on July 31, 2029 and on July 31 every five years thereafter.

Subject to regulatory approval and certain provisions of the shares, we may redeem all or any part of the then outstanding Series 51 shares at par on July 31, 2024 and on July 31 every five years thereafter; we may redeem all or any part of the then outstanding Series 52 shares at par on July 31, 2029 and on July 31 every five years thereafter.

Series 39, Series 40, Series 41, Series 42, Series 43, Series 44, Series 45, Series 46, Series 47, Series 49, Series 48 and Series 51 shares are subject to an NVCC provision, necessary for the shares to qualify as regulatory capital under Basel III. As such, the shares are automatically converted into common shares upon the occurrence of a "Trigger Event". As described in the Capital Adequacy Guidelines, a Trigger Event occurs when OSFI determines the bank is or is about to become non-viable and, if after conversion of all contingent instruments and consideration of any other relevant factors or circumstances, it is reasonably likely that its viability will be restored or maintained; or if the bank has accepted or agreed to accept a capital injection or equivalent support from a federal or provincial government, without which OSFI would have determined the bank to be non-viable. Each such share is convertible into a number of common shares, determined by dividing the par value of $25.00 plus declared and unpaid dividends by the average common share price (as defined in the relevant prospectus supplement) subject to a minimum price of $5.00 per share (subject to adjustment in certain events as defined in the relevant prospectus supplement). We have recorded the Series 39, Series 41, Series 43, Series 45, Series 47, Series 49, and Series 51 shares as equity.

Terms of Class A Preferred Shares

Outstanding as at October 31, 2019	Quarterly dividends per share [1]	Earliest specified redemption date	Cash redemption price per share
Series 39	$ 0.232063	July 31, 2024	$ 25.00
Series 41	$ 0.234375	January 31, 2020	$ 25.00
Series 43	$ 0.225000	July 31, 2020	$ 25.00
Series 45	$ 0.275000	July 31, 2022	$ 25.00
Series 47	$ 0.281250	January 31 2023	$ 25.00
Series 49	$ 0.325000	April 30, 2024	$ 25.00
Series 51	$ 0.321875	July 31, 2024	$ 25.00

(1) Quarterly dividends may be adjusted depending on the timing of issuance or redemption.

Restrictions on the payment of dividends

Under Section 79 of the *Bank Act* (Canada), a bank, including CIBC, is prohibited from declaring or paying any dividends on its preferred or common shares if there are reasonable grounds for believing that the bank is, or the payment would cause it to be, in contravention of any capital adequacy or liquidity regulation or any direction to the bank made by OSFI.

In addition, our ability to pay common share dividends is also restricted by the terms of the outstanding preferred shares. These terms provide that we may not pay dividends on our common shares at any time without the approval of holders of the outstanding preferred shares, unless all dividends to preferred shareholders that are then payable have been declared and paid or set apart for payment.

We have agreed that if CIBC Capital Trust fails to pay any interest payments on its $300 million of CIBC Tier 1 Notes – Series B, due June 30, 2108, we will not declare dividends of any kind on any of our preferred or common shares for a specified period of time. For additional details see Note 16.

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

Capital

Objectives, policy and procedures

Our objective is to employ a strong and efficient capital base. We manage capital in accordance with a capital policy approved by the Board. The policy includes specific guidelines that relate to capital strength, capital mix, dividends and return of capital, and the unconsolidated capital adequacy of regulated entities. Capital is monitored continuously for compliance.

Each year, a Capital Plan and three-year outlook are established as a part of the financial plan, and they encompass all material elements of capital: forecasts of sources and uses of capital including earnings, dividends, business growth, and corporate initiatives, as well as maturities, redemptions, and issuances of capital instruments. The Capital Plan is stress-tested to ensure that it is sufficiently robust under severe but plausible stress scenarios. The level of capital and capital ratios are monitored throughout the year including a comparison to the Capital Plan. There were no significant changes made to the objectives, policy, guidelines and procedures during the year.

Regulatory capital requirements under Basel III

Our regulatory capital requirements are determined in accordance with guidelines issued by OSFI, which are based on the risk-based capital standards developed by the Basel Committee on Banking Supervision (BCBS).

CIBC has been designated by OSFI as a D-SIB in Canada, and is subject to a CET1 surcharge equal to 1.0% of risk-weighted assets (RWA). In June 2018, OSFI publicly disclosed that it requires D-SIBs to hold a Domestic Stability Buffer, currently set at 2.0% of RWA. This results in current targets, including all buffer requirements, for CET1, Tier 1 and Total capital ratios of 10.0%, 11.5%, and 13.5%, respectively. These targets may be higher for certain institutions at OSFI's discretion.

Regulatory capital and ratios

Regulatory capital under Basel III consists of CET1, Tier 1 and Tier 2 capital.

CET1 capital includes common shares, retained earnings, AOCI (excluding AOCI relating to cash flow hedges and changes to FVO liabilities attributable to changes in own credit risk), and qualifying instruments issued by a consolidated banking subsidiary to third parties, less regulatory adjustments for items such as goodwill and other intangible assets (net of related deferred tax liabilities), certain deferred tax assets, net assets related to defined benefit pension plans as reported on our consolidated balance sheet (net of related deferred tax liabilities), and certain investments. Additional Tier 1 (AT1) capital primarily includes NVCC preferred shares, qualifying instruments issued by a consolidated subsidiary to third parties, and non-qualifying innovative Tier 1 notes subject to phase-out rules for capital instruments. Tier 2 capital includes NVCC subordinated indebtedness, non-qualifying subordinated indebtedness subject to phase-out rules for capital instruments, eligible collective allowance under the standardized approach, and qualifying instruments issued by a consolidated subsidiary to third parties.

Our capital ratios and leverage ratio are presented in the table below:

$ millions, as at October 31		**2019**	2018
CET1 capital		**$ 27,707**	$ 24,641
Tier 1 capital	A	**30,851**	27,908
Total capital		**35,854**	32,230
Total RWA [(1)]		**239,863**	n/a
CET1 capital RWA [(1)]		**n/a**	216,144
Tier 1 capital RWA [(1)]		**n/a**	216,303
Total capital RWA [(1)]		**n/a**	216,462
CET1 ratio		**11.6 %**	11.4 %
Tier 1 capital ratio		**12.9 %**	12.9 %
Total capital ratio		**15.0 %**	14.9 %
Leverage ratio exposure	B	**$ 714,343**	$ 653,946
Leverage ratio	A/B	**4.3 %**	4.3 %

(1) During 2018, before any capital floor requirement, there were three different levels of RWA for the calculation of CIBC's CET1, Tier 1 and Total capital ratios as CIBC elected in 2014 to phase in the CVA capital charge as permitted under OSFI's guideline. Beginning in the first quarter of 2019 the ratios are calculated by reference to the same level of RWA as the phase-in of the CVA capital charge has been completed.

n/a Not applicable.

During the years ended October 31, 2019 and 2018, we have complied with OSFI's regulatory capital requirements.

Note 16 | Capital Trust securities

On March 13, 2009, CIBC Capital Trust, a trust wholly owned by CIBC and established under the laws of the Province of Ontario, issued $1,300 million of CIBC Tier 1 Notes – Series A, due June 30, 2108, and $300 million of CIBC Tier 1 Notes – Series B, due June 30, 2108 (collectively, the Notes). CIBC Capital Trust is not consolidated by CIBC and the senior deposit notes issued by CIBC to CIBC Capital Trust are reported as Deposits – Business and government on the consolidated balance sheet.

The Notes are structured to achieve Tier 1 regulatory capital treatment and, as such, have features of equity capital, including the deferral of cash interest under certain circumstances (Deferral Events). In the case of a Deferral Event, holders of the Notes will be required to invest interest paid on the Notes in our perpetual preferred shares. Should CIBC Capital Trust fail to pay the semi-annual interest payments on the Notes in full, we will not declare dividends of any kind on any of our preferred or common shares for a specified period of time.

In addition, the Notes will be automatically exchanged for our perpetual preferred shares upon the occurrence of any one of the following events: (i) proceedings are commenced for our winding-up; (ii) OSFI takes control of us or our assets; (iii) we or OSFI are of the opinion that our Tier 1 capital ratio is less than 5% or our Total capital ratio is less than 8%; or (iv) OSFI directs us pursuant to the *Bank Act* (Canada) to increase our capital or provide additional liquidity and we elect such automatic exchange or we fail to comply with such direction. Upon such automatic exchange, holders of the Notes will cease to have any claim or entitlement to interest or principal against CIBC Capital Trust.

CIBC Tier 1 Notes – Series A pays interest, at a rate of 9.976%, semi-annually until June 30, 2019. On June 30, 2019, and on each five-year anniversary thereafter, the interest rate on the CIBC Tier 1 Notes – Series A will reset to the five-year Government of Canada bond yield at such time plus 10.425%. CIBC Tier 1 Notes – Series B pays interest, at a rate of 10.25%, semi-annually until June 30, 2039. On June 30, 2039, and on each five-year anniversary thereafter, the interest rate on the CIBC Tier 1 Notes – Series B will reset to the five-year Government of Canada bond yield at such time plus 9.878%.

Subject to the approval of OSFI, CIBC Capital Trust may, in whole or in part, on the redemption dates specified in the table below, and on any date thereafter, redeem the CIBC Tier 1 Notes – Series A or Series B without the consent of the holders. Also, subject to the approval of OSFI, CIBC Capital Trust may redeem all, but not part of, the CIBC Tier 1 Notes – Series A or Series B prior to the earliest redemption date specified in the table below without the consent of the holders, upon the occurrence of certain specified tax or regulatory events.

OSFI's capital adequacy guidelines confirmed the adoption of Basel III in Canada and clarified the treatment of non-qualifying capital instruments. Non-qualifying capital instruments are subject to a 10% phase-out per annum commencing in 2013. Banks are expected to develop and maintain a redemption schedule for non-qualifying capital instruments that gives priority to redeeming instruments at their regular par redemption dates before exercising any regulatory event redemption rights. With the adoption of Basel III, innovative capital instruments such as the CIBC Tier 1 Notes are considered non-qualifying capital instruments. We expect to exercise our regulatory event redemption rights in fiscal 2022 in respect of the $300 million CIBC Tier 1 Notes – Series B.

On June 30, 2019, CIBC Capital Trust redeemed all $1.3 billion of the CIBC Tier 1 Notes – Series A. In accordance with their terms, the CIBC Tier 1 Notes – Series A were redeemed at 100% of their principal amount, together with accrued and unpaid interest thereon. As a result of the redemption of the CIBC Tier 1 Notes – Series A by CIBC Capital Trust, CIBC redeemed the corresponding senior deposit notes issued by CIBC to CIBC Capital Trust on June 30, 2019.

The table below presents the significant terms and conditions of the Notes. As at October 31, 2019, we held nil trading positions (2018: $8 million in net long trading positions) of the Notes.

$ millions, as at October 31						**2019**	2018
				Earliest redemption dates		Principal amount	
	Issue date	Interest payment dates	Yield	At greater of Canada Yield Price and par (1)	At par		
Series A	March 13, 2009	June 30, December 31	9.976 %	June 30, 2014	June 30, 2019	**$ –**	$ 1,300
Series B	March 13, 2009	June 30, December 31	10.250 %	June 30, 2014	June 30, 2039	**300**	300
						$ 300	$ 1,600

(1) Canada Yield Price: a price calculated at the time of redemption (other than an interest rate reset date applicable to the series) to provide a yield to maturity equal to the yield on a Government of Canada bond of appropriate maturity plus: (i) for the CIBC Tier 1 Notes – Series A, (a) 1.735% if the redemption date is any time prior to June 30, 2019, or (b) 3.475% if the redemption date is any time on or after June 30, 2019; and (ii) for the CIBC Tier 1 Notes – Series B, (a) 1.645% if the redemption date is any time prior to June 30, 2039, or (b) 3.29% if the redemption date is any time on or after June 30, 2039.

Note 17 Share-based payments

We provide the following share-based compensation to certain employees and directors in the form of cash-settled or equity-settled awards.

Restricted share award plan

Under the RSA plan, share unit equivalents (RSA units) are granted to certain key employees on an annual basis or during the year as special grants. RSA grants are made in the form of cash-settled awards which generally vest and settle in cash either at the end of three years or one-third annually beginning one year after the date of the grant. Dividend equivalents on RSA units are paid in cash or in the form of additional RSA units to the employees over or at the end of the vesting period or settlement date.

Grant date fair value of each cash-settled RSA unit granted in the normal course is calculated based on the average closing price per common share on the TSX for the 10 trading days prior to a date specified in the grant terms. Upon vesting, each RSA unit is settled in cash based on the average closing price per common share on the TSX for the 10 trading days prior to the vesting date. Grant date fair value of each cash-settled RSA unit granted as part of the acquisition of The PrivateBank in 2017 was based on a 10-day average volume-weighted share price prior to the acquisition date.

During the year, 2,666,888 RSAs were granted at a weighted-average price of $113.01 (2018: 2,653,437 granted at a weighted-average price of $115.20; 2017: 4,331,700 granted at a weighted-average price of $105.67) and the number of RSAs outstanding as at October 31, 2019 was 8,343,235 (2018: 8,252,167; 2017: 7,590,852). Compensation expense in respect of RSAs, before the impact of hedging, totalled $319 million in 2019 (2018: $352 million; 2017: $323 million). As at October 31, 2019, liabilities in respect of RSAs, which are included in Other liabilities, were $850 million (2018: $858 million).

Performance share unit plan

Under the PSU plan, awards are granted to certain key employees on an annual basis in December. PSU grants are made in the form of cash-settled awards which vest and settle in cash at the end of three years. Dividend equivalents on PSUs granted prior to December 2015 are paid in cash to the employees over the vesting period. For PSUs granted in December 2015 and later, employees receive dividend equivalents in the form of additional PSUs.

Grant date fair value of each cash-settled PSU is calculated based on the average closing price per common share on the TSX for the 10 trading days prior to a date specified in the grant terms. The final number of PSUs that vest will range from 75% to 125% of the initial number awarded based on CIBC's performance relative to the other major Canadian banks. Upon vesting, each PSU is settled in cash based on the average closing price per common share on the TSX for the 10 trading days prior to the vesting date.

During the year, 952,273 PSUs were granted at a weighted-average price of $113.48 (2018: 894,040 granted at a weighted-average price of $115.23; 2017: 952,434 granted at a weighted-average price of $105.15). As at October 31, 2019, the number of PSUs outstanding, before the impact of CIBC's relative performance, was 3,033,980 (2018: 2,920,695; 2017: 2,651,991). Compensation expense in respect of PSUs, before the impact of hedging, totalled $106 million in 2019 (2018: $123 million; 2017: $128 million). As at October 31, 2019, liabilities in respect of PSUs, which are included in Other liabilities, were $319 million (2018: $328 million).

Restricted stock plan

As part of the acquisition of The PrivateBank in 2017, CIBC restricted stock was issued to replace previously issued PrivateBancorp restricted stock held by employees of The PrivateBank with substantially the same terms and vesting schedule. Under the restricted stock plan, awards were granted to certain key employees in the form of equity-settled awards. Pursuant to the acquisition, each restricted stock represents a CIBC common share with transferability restriction. The common shares are not restricted to voting rights, but dividends are subject to forfeiture under the terms of the grant. Dividends are payable in cash and are distributed to the holders to the extent and at the same time the underlying shares vest and are released from restriction. The transfer restrictions generally vest over a three-year period and vesting is contingent upon continued employment. At the acquisition date, restricted stock was granted at a 10-day average volume-weighted share price of US$80.09 and the number of restricted stock outstanding as at October 31, 2019 was nil (2018: 60,764). Compensation expense in respect of restricted stock totalled $1 million in 2019 (2018: $4 million).

Exchangeable shares

As part of our acquisition of Wellington Financial in the first quarter of 2018, equity-settled awards in the form of exchangeable shares, which vest over a period of up to 5 years and have specific service and non-market performance vesting conditions, were issued to selected employees. Employees receive dividend equivalents in the form of additional exchangeable shares upon vesting. Compensation expense in respect of the exchangeable shares is based on the grant date fair value, adjusted for the impact of best estimates on the satisfaction of the service requirements and non-market performance conditions. At the acquisition, each exchangeable share was granted at $123.99, and the number of exchangeable shares outstanding as at October 31, 2019 was 386,010 (2018: 493,310). Compensation expense in respect of exchangeable shares totalled $8 million in 2019 (2018: $20 million).

Deferred share unit plan/deferred compensation plan

Under the DSU plan, certain key employees are granted DSUs during the year as special grants. Under the DSU plan and the DCP plan assumed through the acquisition of The PrivateBank in 2017, certain employees can also elect to receive DSUs in exchange for cash compensation that they would otherwise be entitled to. DSUs vest in accordance with the vesting schedule defined in the grant agreement or plan document and settle in cash on a date elected by the employee that is not less than two years after the deferral commitment, or after the employee leaves CIBC in a lump-sum payment or up to 10 annual installments. Employees receive dividend equivalents in the form of additional DSUs.

Grant date fair value of each cash-settled DSU that is not granted under the DCP, is calculated based on the average closing price per common share on the TSX for the 10 trading days prior to a date specified in the grant terms. These DSUs are settled in cash based on the average closing price per common share on the TSX for the 10 trading days prior to the payout date and after the employee's termination of employment. For the DCP plan, the grant date fair value for units issued as part of the acquisition of The PrivateBank in 2017 was based on a 10-day average volume-weighted share price prior to the acquisition date. The grant date fair value for subsequent DCP grants is based on the closing stock price on the New York Stock Exchange (NYSE) on the last day of the quarter. Upon distribution, each DSU is settled in cash based on the average closing price per common share on the NYSE for the 10 trading days prior to the date of the distribution.

During the year, 173,089 DSUs were granted at a weighted-average price of $110.53 (2018: 132,739 granted at a weighted-average price of $115.60; 2017: 198,301 granted at a weighted-average price of $106.21) and the number of DSUs outstanding as at October 31, 2019 was 617,281 (2018: 447,200; 2017: 248,032). Compensation expense in respect of DSUs, before the impact of hedging, totalled $17 million in 2019 (2018: $26 million; 2017: $20 million). As at October 31, 2019, liabilities in respect of DSUs, which are included in Other liabilities, were $82 million (2018: $64 million).

Directors' plans

Under the Director DSU/Common Share Election Plan, each director who is not an officer or employee of CIBC may elect to receive the annual equity retainer as either DSUs or common shares.

Under the Non-Officer Director Share Plan, each non-officer director may elect to receive all or a portion of their remuneration in the form of cash, common shares or DSUs.

The value of DSUs credited to a director is payable when he or she is no longer a director or employee of CIBC or of an affiliate of CIBC. In addition, for directors subject to section 409A of the U.S. Internal Revenue Code of 1986, as amended, the director is not providing any services to CIBC or any member of its controlled group as an independent contractor. In addition, under the Director DSU/Common Share Election Plan, the value of DSUs is payable only if the director is not related to, or affiliated with, CIBC as defined in the *Income Tax Act* (Canada).

Other non-interest expense in respect of the DSU components of these plans totalled $3 million in 2019 (2018: $3 million; 2017: $5 million). As at October 31, 2019, liabilities in respect of DSUs, which are included in Other liabilities, were $27 million (2018: $25 million).

Stock option plans

Under the ESOP, stock options are periodically granted to certain key employees. Options provide the employee with the right to purchase common shares from CIBC at a fixed price not less than the closing price of the shares on the trading day immediately preceding the grant date. In general, the options vest by the end of the fourth year and expire 10 years from the grant date.

As at October 31, 2019, 15,310,806 (2018: 15,703,861) common shares were reserved for future issue under our stock option plans. Stock options in respect of 5,176,962 (2018: 4,713,163) common shares have been granted but not yet exercised under the ESOP. 10,133,844 (2018: 10,990,698) common shares remain available for future stock option grants. At the April 2018 Annual Meeting, CIBC received shareholder approval to increase the number of common shares reserved for issuance by 10,000,000 common shares to a maximum of 52,634,500 common shares under the ESOP. In addition, in 2017, 1,119,211 common shares were reserved for issue pursuant to the terms in the merger agreement of the acquisition of The PrivateBank, which specified that each PrivateBancorp outstanding and unexercised option was converted into an option to purchase CIBC shares. On November 30, 2017, the Board terminated the Non-Officer Director Stock Option Plan.

The following tables summarize the activities of the stock options and provide additional details related to stock options outstanding and vested.

As at or for the year ended October 31		**2019**		2018		2017
	Number of stock options	**Weighted-average exercise price** [1]	Number of stock options	Weighted-average exercise price	Number of stock options	Weighted-average exercise price
Outstanding at beginning of year	**4,713,163**	**$ 91.05**	4,876,673	$ 84.28	4,073,451	$ 86.92
Granted	**894,324**	**111.50**	756,516	120.02	1,935,997	75.83
Exercised [2]	**(393,055)**	**58.60**	(876,309)	67.84	(990,934)	76.78
Forfeited	**(35,714)**	**110.42**	(42,443)	103.98	(133,581)	99.77
Cancelled/expired	**(1,756)**	**45.63**	(1,274)	45.08	(8,260)	58.99
Outstanding at end of year	**5,176,962**	**$ 96.93**	4,713,163	$ 91.05	4,876,673	$ 84.28
Exercisable at end of year	**2,290,139**	**$ 80.27**	1,898,125	$ 71.89	1,988,449	$ 64.28
Available for grant	**10,133,844**		10,990,698		1,777,497	

(1) For foreign currency-denominated options granted and exercised during the year, the weighted-average exercise prices are translated using exchange rates as at the grant date and settlement date, respectively. The weighted-average exercise price of outstanding balances as at October 31, 2019 reflects the conversion of foreign currency-denominated options at the year-end exchange rate.

(2) The weighted-average share price at the date of exercise was $106.94 (2018: $120.55; 2017: $110.44).

As at October 31, 2019	Stock options outstanding			Stock options vested	
Range of exercise prices	**Number outstanding**	**Weighted-average contractual life remaining**	**Weighted-average exercise price**	**Number outstanding**	**Weighted-average exercise price**
$11.00 – $55.00	**299,179**	**2.72**	**$ 30.50**	**299,179**	**$ 30.50**
$55.01 – $65.00	**164,194**	**5.73**	**60.23**	**164,194**	**60.23**
$65.01 – $75.00	**235,996**	**1.77**	**71.33**	**235,996**	**71.33**
$75.01 – $85.00	**391,931**	**2.67**	**79.75**	**391,931**	**79.75**
$85.01 – $95.00	**392,973**	**4.29**	**90.93**	**388,894**	**90.94**
$95.01 – $105.00	**1,167,876**	**5.69**	**99.65**	**809,945**	**100.46**
$105.01 – $115.00	**1,783,985**	**8.15**	**111.14**	**–**	**–**
$115.01 – $125.00	**740,828**	**8.12**	**120.02**	**–**	**–**
	5,176,962	**6.20**	**$ 97.82**	**2,290,139**	**$ 80.27**

The fair value of options granted during the year were measured at the grant date using the Black-Scholes option pricing model. Model assumptions are based on observable market data for the risk-free interest rate and dividend yield; contractual terms for the exercise price; and historical experience for expected life. Volatility assumptions are best estimates of market implied volatility matching the exercise price and expected life of the options.

The fair value of in-the-money options granted as part of the acquisition of The PrivateBank in 2017 approximated their intrinsic value.

The following weighted-average assumptions were used as inputs into the Black-Scholes option pricing model to determine the fair value of options on the date of grant, excluding the options granted pursuant to the acquisition of The PrivateBank:

For the year ended October 31	**2019**	2018	2017
Weighted-average assumptions			
Risk-free interest rate	**2.63 %**	2.08 %	1.58 %
Expected dividend yield	**5.87 %**	5.15 %	5.75 %
Expected share price volatility	**18.36 %**	14.74 %	14.53 %
Expected life	**6 years**	6 years	6 years
Share price/exercise price	**$ 111.50**	$ 120.02	$ 110.83

For 2019, the weighted-average grant date fair value of options was $8.22 (2018: $7.06; 2017: $5.31). The weighted-average grant date fair value of options granted pursuant to the acquisition of The PrivateBank was $63.75 in 2017.

Compensation expense in respect of stock options totalled $7 million in 2019 (2018: $7 million; 2017: $5 million).

Employee share purchase plan

Under our Canadian ESPP, qualifying employees can choose each year to have any portion of their eligible earnings withheld to purchase common shares. We match 50% of the employee contribution amount, up to a maximum contribution of 3% of eligible earnings, subject to a ceiling of $2,250 annually. CIBC contributions vest after employees have two years of continuous participation in the plan, and all subsequent contributions vest immediately. Similar programs exist in other regions globally, where each year qualifying employees can choose to have a portion of their eligible earnings withheld to purchase common shares and receive a matching employer contribution subject to each plan's provisions. Employee contributions to our ESPP are used to purchase common shares from Treasury. CIBC FirstCaribbean operates an ESPP locally, in which contributions are used by the plan trustee to purchase CIBC FirstCaribbean common shares in the open market.

Our contributions are expensed as incurred and totalled $48 million in 2019 (2018: $45 million; 2017: $43 million).

Note 18 | Post-employment benefits

We sponsor pension and other post-employment benefit plans for eligible employees in a number of jurisdictions including Canada, the U.S., the U.K., and the Caribbean. Our pension plans include registered funded defined benefit pension plans, supplemental arrangements that provide pension benefits in excess of statutory limits, and defined contribution plans. We also provide certain health-care, life insurance, and other benefits to eligible employees and retired members. Plan assets and defined benefit obligations related to our defined benefit plans are measured for accounting purposes as at October 31 each year.

Plan characteristics, funding and risks

Pension plans

Pension plans include CIBC's Canadian, U.S., U.K., and Caribbean pension plans. CIBC's Canadian pension plans represent approximately 90% of our consolidated defined benefit obligation. All of our Canadian pension plans are defined benefit plans, the most significant of which is our principal Canadian pension plan (the CIBC Pension Plan), which encompasses approximately 64,000 active, deferred, and retired members.

The CIBC Pension Plan provides members with monthly pension income at retirement based on a prescribed plan formula which is based on a combination of maximum yearly pensionable earnings, average earnings at retirement and length of service recognized in the plan. There is a two-year waiting period for members to join the CIBC Pension Plan.

The CIBC Pension Plan is funded through a separate trust. Actuarial funding valuations are prepared by the Plan's external actuary at least once every three years or more frequently as required by Canadian pension legislation to determine CIBC's minimum funding requirements as well as maximum permitted contributions. Any deficits determined in the funding valuations must generally be funded over a period not exceeding fifteen years. CIBC's pension

funding policy is to make at least the minimum annual required contributions required by regulations. Any contributions in excess of the minimum requirements are discretionary.

The CIBC Pension Plan is registered with OSFI and the Canada Revenue Agency and is subject to the acts and regulations that govern federally regulated pension plans.

Other post-employment plans

Other post-employment plans include CIBC's Canadian, U.S. and Caribbean post-retirement health-care benefit plans (referred to for disclosure purposes as other post-employment plans). CIBC's Canadian other post-employment plan (the Canadian post-employment plan) represents more than 90% of our consolidated other post-employment defined benefit obligation.

The Canadian post-employment plan provides medical, dental and life insurance benefits to retirees that meet specified eligibility requirements, including specified age and service period eligibility requirements. CIBC reimburses 100% of the cost of benefits for eligible employees that retired prior to January 1, 2009, whereas the contribution level for medical and dental benefits for eligible employees that retire subsequent to this date has been fixed at a specified level. The plan is funded on a pay-as-you-go basis.

Benefit changes

There were no material changes to the terms of our defined benefit pension or other post-employment plans in 2019 or 2018.

Risks

CIBC's defined benefit plans expose the group to actuarial risks (such as longevity risk), currency risk, interest rate risk, market (investment) risk and health-care cost inflation risks.

The CIBC pension plan operates a currency overlay strategy, which may use forwards or similar instruments, to manage and mitigate its currency risk.

Interest rate risk is managed as part of the CIBC pension plan's liability-driven investment strategy through a combination of physical bonds, overlays funded in the repo market, and/or derivatives.

Market (investment) risk is mitigated through a multi-asset portfolio construction process that diversifies across a variety of market risk drivers.

The use of derivatives within the CIBC pension plan is governed by its derivatives policy that was approved by the Pension Benefits Management Committee (PBMC) and permits the use of derivatives to manage risk at the discretion of the Pension Investment Committee (PIC). In addition to the management of interest rate risk, risk reduction and mitigation strategies may include hedging of currency, credit spread and/or equity risks. The derivatives policy also permits the use of derivatives to enhance plan returns.

Plan governance

All of CIBC's pension arrangements are governed by local pension committees, senior management or a board of trustees. However, all significant plan changes require approval from the Management Resources and Compensation Committee (MRCC). For the Canadian pension plans, the MRCC is responsible for setting the strategy for the pension plans, reviewing material risks, performance including funded status, and approving material design or governance changes.

While specific investment policies are determined at a plan level to reflect the unique characteristics of each plan, common investment policies for all plans include the optimization of the risk-return relationship using a portfolio of multiple asset classes diversified by market segment, economic sector, and issuer. The objectives are to secure the benefits promised by our funded plans, to maximize long-term investment returns while not compromising the benefit security of the respective plans, manage the level of funding contributions in conjunction with the stability of the funded status, and implement all policies in a cost effective manner. Investments in quoted debt and equity (held either directly or indirectly through investment funds) represent the most significant asset allocations.

The use of derivatives is limited to the purposes and instruments described in the derivatives policy of the CIBC Pension Plan. These include the use of synthetic debt or equity instruments, currency hedging, risk reduction and enhancement of returns.

Investments in specific asset classes are further diversified across funds, managers, strategies, sectors and geographies, depending on the specific characteristics of each asset class.

The exposure to any one of these asset classes will be determined by our assessment of the needs of the plan assets and economic and financial market conditions. Factors evaluated before adopting the asset mix include demographics, cash-flow payout requirements, liquidity requirements, actuarial assumptions, expected benefit increases, and plan funding requirements.

Management of the assets of the various Canadian plans has been delegated primarily to the PIC, which is a committee that is composed of CIBC management. The PIC is responsible for the appointment and termination of individual investment managers (which includes CIBC Asset Management Inc., a wholly owned subsidiary of CIBC), who each have investment discretion within established target asset mix ranges as set by the MRCC. Should a fund's actual asset mix fall outside specified ranges, the assets are re-balanced as required to be within the target asset mix ranges. On a periodic basis, an Asset-Liability Matching study is performed in which the consequences of the strategic investment policies are analyzed.

Management of the actuarial valuations of the various Canadian plans is primarily the responsibility of the Pension Finance & Administration Committee (PFAC). The PFAC is responsible for approving the actuarial assumptions for the valuations of the plans, and for recommending the level of annual funding for the Canadian plans to CIBC senior management.

Local committees with similar mandates manage our non-Canadian plans and annually report back to the MRCC on all material governance activities.

Amounts recognized on the consolidated balance sheet

The following tables present the financial position of our defined benefit pension and other post-employment plans for Canada, the U.S., the U.K., and our Caribbean subsidiaries. Other minor plans operated by some of our subsidiaries are not material and are not included in these disclosures.

	Pension plans		Other post-employment plans	
$ millions, as at or for the year ended October 31	**2019**	2018	**2019**	2018
Defined benefit obligation				
Balance at beginning of year	**$ 7,370**	$ 7,613	**$ 589**	$ 696
Current service cost	**218**	223	**11**	13
Past service cost	**1**	–	**–**	–
Interest cost on defined benefit obligation	**303**	281	**24**	25
Employee contributions	**5**	5	**–**	–
Benefits paid	**(353)**	(334)	**(30)**	(29)
Loss on settlements	**1**	–	**–**	–
Foreign exchange rate changes	**(1)**	9	**–**	1
Net actuarial (gains) losses on defined benefit obligation	**1,178**	(427)	**77**	(117)
Balance at end of year	**$ 8,722**	$ 7,370	**$ 671**	$ 589
Plan assets				
Fair value at beginning of year	**$ 7,691**	$ 7,758	**$ –**	$ –
Interest income on plan assets [1]	**323**	294	**–**	–
Net actuarial gains (losses) on plan assets [1]	**965**	(234)	**–**	–
Employer contributions	**229**	199	**30**	29
Employee contributions	**5**	5	**–**	–
Benefits paid	**(353)**	(334)	**(30)**	(29)
Plan administration costs	**(6)**	(6)	**–**	–
Net transfer out	**–**	(1)	**–**	–
Foreign exchange rate changes	**(1)**	10	**–**	–
Fair value at end of year	**$ 8,853**	$ 7,691	**$ –**	$ –
Net defined benefit asset (liability)	**131**	321	**(671)**	(589)
Valuation allowance [2]	**(15)**	(10)	**–**	–
Net defined benefit asset (liability), net of valuation allowance	**$ 116**	$ 311	**$ (671)**	$ (589)

(1) The actual return on plan assets for the year was $1,288 million (2018: $60 million).
(2) The valuation allowance reflects the effect of asset ceiling on plans with a net defined benefit asset.

The net defined benefit asset (liability), net of valuation allowance, included in other assets and other liabilities is as follows:

	Pension plans		Other post-employment plans	
$ millions, as at October 31	**2019**	2018	**2019**	2018
Other assets [1]	**$ 175**	$ 361	**$ –**	$ –
Other liabilities [1]	**(59)**	(50)	**(671)**	(589)
	$ 116	$ 311	**$ (671)**	$ (589)

(1) Excludes nil of other assets (2018: $1 million) and $7 million (2018: $6 million) of other liabilities for other post-employment plans of immaterial subsidiaries.

The defined benefit obligation and plan assets by region are as follows:

	Pension plans		Other post-employment plans	
$ millions, as at October 31	**2019**	2018	**2019**	2018
Defined benefit obligation				
Canada	**$ 7,982**	$ 6,684	**$ 620**	$ 541
U.S., U.K., and the Caribbean	**740**	686	**51**	48
Defined benefit obligation at the end of year	**$ 8,722**	$ 7,370	**$ 671**	$ 589
Plan assets				
Canada	**$ 8,004**	$ 6,908	**$ –**	$ –
U.S., U.K., and the Caribbean	**849**	783	**–**	–
Plan assets at the end of year	**$ 8,853**	$ 7,691	**$ –**	$ –

Amounts recognized in the consolidated statement of income

The net defined benefit expense for our defined benefit plans in Canada, the U.S., the U.K., and the Caribbean is as follows:

$ millions, for the year ended October 31	Pension plans			Other post-employment plans		
	2019	2018	2017	**2019**	2018	2017
Current service cost [1]	**$ 218**	$ 223	$ 214	**$ 11**	$ 13	$ 14
Past service cost	**1**	–	(5)	**–**	–	–
Interest cost on defined benefit obligation	**303**	281	272	**24**	25	25
Interest income on plan assets	**(323)**	(294)	(279)	**–**	–	–
Interest cost on effect of asset ceiling	**–**	–	1	**–**	–	–
Plan administration costs	**6**	6	6	**–**	–	–
Loss on settlements	**1**	–	–	**–**	–	–
Special termination benefits	**–**	–	2	**–**	–	–
Net defined benefit plan expense recognized in net income	**$ 206**	$ 216	$ 211	**$ 35**	$ 38	$ 39

(1) The 2019, 2018 and 2017 current service costs were calculated using separate discount rates of 4.14%, 3.72%, and 3.72%, respectively, to reflect the longer duration of future benefits payments associated with the additional year of service to be earned by the plan's active participants.

Amounts recognized in the consolidated statement of comprehensive income

The net remeasurement gains (losses) recognized in OCI for our defined benefit plans in Canada, the U.S., the U.K., and the Caribbean is as follows:

$ millions, for the year ended October 31	Pension plans			Other post-employment plans		
	2019	2018	2017	**2019**	2018	2017
Actuarial gains (losses) on defined benefit obligation arising from changes in:						
Demographic assumptions	**$ –**	$ 4	$ 1	**$ –**	$ 46	$ 26
Financial assumptions	**(1,133)**	488	19	**(78)**	67	5
Experience	**(45)**	(65)	(91)	**1**	4	5
Net actuarial gains (losses) on plan assets	**965**	(234)	221	**–**	–	–
Changes in asset ceiling excluding interest income	**(5)**	1	8	**–**	–	–
Net remeasurement gains (losses) recognized in OCI [1]	**$ (218)**	$ 194	$ 158	**$ (77)**	$ 117	$ 36

(1) Excludes net remeasurement gains/losses recognized in OCI in respect of immaterial subsidiaries not included in the disclosures totalling $2 million net losses (2018: $2 million of net gains; 2017: $1 million of net losses).

Canadian defined benefit plans

As the Canadian defined benefit pension and other post-employment benefit plans represent approximately 90% of our consolidated defined benefit obligation, they are the subject and focus of the disclosures in the balance of this note.

Disaggregation and maturity profile of defined benefit obligation

The breakdown of the defined benefit obligation for our Canadian plans between active, deferred and retired members is as follows:

$ millions, as at October 31	Pension plans		Other post-employment plans	
	2019	2018	**2019**	2018
Active members	**$ 4,165**	$ 3,482	**$ 179**	$ 142
Deferred members	**587**	484	**–**	–
Retired members	**3,230**	2,718	**441**	399
Total	**$ 7,982**	$ 6,684	**$ 620**	$ 541

The weighted-average duration of the defined benefit obligation for our Canadian plans is as follows:

As at October 31	Pension plans		Other post-employment plans	
	2019	2018	**2019**	2018
Weighted-average duration, in years	**15.4**	15.5	**13.6**	12.6

Plan assets

The major categories of our defined benefit pension plan assets for our Canadian plans are as follows:

$ millions, as at October 31	2019		2018	
Asset category (1)				
Canadian equity securities (2)	**$ 547**	**7 %**	$ 636	9 %
Debt securities (3)				
Government bonds	**4,623**	**58**	2,636	38
Corporate bonds	**1,024**	**13**	1,027	15
Inflation adjusted bonds	**76**	**1**	69	1
	5,723	**72**	3,732	54
Investment funds (4)				
Canadian equity funds	**28**	**–**	23	–
U.S. equity funds	**379**	**5**	342	5
International equity funds (5)	**32**	**–**	25	–
Global equity funds (5)	**907**	**12**	1,077	16
Emerging markets equity funds	**256**	**3**	247	4
Fixed income funds	**110**	**1**	93	1
	1,712	**21**	1,807	26
Other (2)				
Hedge funds	**–**	**–**	10	–
Alternative investments	**1,095**	**13**	507	7
Cash and cash equivalents and other	**220**	**3**	317	5
Obligations related to securities sold under repurchase agreements	**(1,293)**	**(16)**	(101)	(1)
	22	**–**	733	11
	$ 8,004	**100 %**	$ 6,908	100 %

(1) Asset categories are based upon risk classification including synthetic exposure through derivatives. The fair value of derivatives as at October 31, 2019 was a net derivative asset of $16 million (2018: net derivative liability of $7 million).
(2) Pension benefit plan assets include CIBC issued securities and deposits of $8 million (2018: $13 million), representing 0.1% of Canadian plan assets (2018: 0.2%). All of the equity securities held as at October 31, 2019 and 2018 have daily quoted prices in active markets except hedge funds, infrastructure, and private equity.
(3) All debt securities held as at October 31, 2019 and 2018 are investment grade, of which $88 million (2018: $38 million) have daily quoted prices in active markets.
(4) $29 million (2018: $24 million) of the investment funds are directly held as at October 31, 2019 and have daily quoted prices in active markets.
(5) Global equity funds include North American and international investments, whereas International equity funds do not include North American investments.

Principal actuarial assumptions

The weighted-average principal assumptions used to determine the defined benefit obligation for our Canadian plans are as follows:

	Pension plans		Other post-employment plans	
As at October 31	**2019**	2018	**2019**	2018
Discount rate	**3.1 %**	4.1 %	**3.0 %**	4.0 %
Rate of compensation increase (1)	**2.3 %**	2.3 %	**2.3 %**	2.3 %

(1) Rates of compensation increase for 2019 and 2018 have been updated to reflect the use of a salary growth rate assumption table that is based on the age and tenure of the employees. The table yields a weighted-average salary growth rate of approximately 2.3% per annum (2018: 2.3%).

Assumptions regarding future mortality have been based on published statistics and mortality tables. The current longevities underlying the values of the defined benefit obligation of our Canadian plans are as follows (in years):

As at October 31	2019	2018
Longevity at age 65 for current retired members		
Males	**23.3**	23.3
Females	**24.8**	24.7
Longevity at age 65 for current members aged 45		
Males	**24.3**	24.2
Females	**25.7**	25.7

The assumed health-care cost trend rates of the Canadian other post-employment plan providing medical, dental, and life insurance benefits are as follows:

For the year ended October 31	2019	2018
Health-care cost trend rates assumed for next year	**5.3 %**	5.3 %
Rate to which the cost trend rate is assumed to decline	**4.0 %**	4.0 %
Year that the rate reaches the ultimate trend rate	**2040**	2040

Sensitivity analysis

Reasonably possible changes to one of the principal actuarial assumptions, holding other assumptions constant, would have affected the defined benefit obligation of our Canadian plans as follows:

Estimated increase (decrease) in defined benefit obligation	Pension plans	Other post-employment plans
$ millions, as at October 31	**2019**	**2019**
Discount rate (100 basis point change)		
Decrease in assumption	**$ 1,378**	**$ 96**
Increase in assumption	**(1,113)**	**(77)**
Rate of compensation increase (100 basis point change)		
Decrease in assumption	**(251)**	**(1)**
Increase in assumption	**285**	**2**
Health-care cost trend rates (100 basis point change)		
Decrease in assumption	**n/a**	**(26)**
Increase in assumption	**n/a**	**30**
Future mortality		
1 year shorter life expectancy	**(199)**	**(13)**
1 year longer life expectancy	**196**	**14**

n/a Not applicable.

The sensitivity analyses presented above are indicative only, and should be considered with caution as they have been calculated in isolation without changing other assumptions. In practice, changes in one assumption may result in changes in another, which may magnify or counteract the disclosed sensitivities.

Future cash flows

Cash contributions

The most recently completed actuarial valuation of the CIBC Pension Plan for funding purposes was as at October 31, 2018. The next actuarial valuation of this plan for funding purposes will be effective as of October 31, 2019.

The minimum contributions for 2020 are anticipated to be $197 million for the Canadian defined benefit pension plans and $28 million for the Canadian other post-employment benefit plans. These estimates are subject to change since contributions are affected by various factors, such as market performance, regulatory requirements, and management's ability to change funding policy.

Expected future benefit payments

The expected future benefit payments for our Canadian plans for the next 10 years are as follows:

$ millions, for the year ended October 31	2020	2021	2022	2023	2024	2025–2029	Total
Defined benefit pension plans	$ 326	$ 333	$ 340	$ 349	$ 357	$ 1,921	$ 3,626
Other post-employment plans	28	29	30	31	32	173	323
	$ 354	$ 362	$ 370	$ 380	$ 389	$ 2,094	$ 3,949

Defined contributions and other plans

We also maintain defined contribution plans for certain employees and make contributions to government pension plans. The expense recognized in the consolidated statement of income for these benefit plans is as follows:

$ millions, for the year ended October 31	**2019**	2018	2017
Defined contribution pension plans	**$ 29**	$ 27	$ 21
Government pension plans [(1)]	**121**	124	107
	$ 150	$ 151	$ 128

(1) Includes Canada Pension Plan, Quebec Pension Plan, and U.S. Federal Insurance Contributions Act.

Note 19 | Income taxes

Total income taxes

$ millions, for the year ended October 31	2019	2018 (1)	2017
Consolidated statement of income			
Provision for current income taxes			
Adjustments for prior years	**$ (125)**	$ (39)	$ (19)
Current income tax expense	**1,365**	1,392	1,160
	1,240	1,353	1,141
Provision for deferred income taxes			
Adjustments for prior years	**107**	32	6
Effect of changes in tax rates and laws	**34**	87	3
Origination and reversal of temporary differences	**(33)**	(50)	12
	108	69	21
	1,348	1,422	1,162
OCI	**22**	42	166
Total comprehensive income	**$ 1,370**	$ 1,464	$ 1,328

(1) Excludes loss carryforwards that were recognized directly in retained earnings relating to foreign exchange translation amounts on CIBC's net investment in foreign operations. These amounts were previously reclassified to retained earnings as part of our transition to IFRS in 2012.

Components of income tax

$ millions, for the year ended October 31	2019	2018	2017
Current income taxes			
Federal	**$ 634**	$ 686	$ 683
Provincial	**428**	467	451
Foreign	**226**	188	127
	1,288	1,341	1,261
Deferred income taxes			
Federal	**30**	54	52
Provincial	**20**	36	33
Foreign	**32**	33	(18)
	82	123	67
	$ 1,370	$ 1,464	$ 1,328

The combined Canadian federal and provincial income tax rate varies each year according to changes in the statutory rates imposed by each of these jurisdictions, and according to changes in the proportion of our business carried out in each province. We are also subject to Canadian taxation on income of foreign branches.

Earnings of foreign subsidiaries would generally only be subject to Canadian tax when distributed to Canada. Additional Canadian taxes that would be payable if all foreign subsidiaries' retained earnings were distributed to the Canadian parent as dividends are estimated to be nil.

The effective rates of income tax in the consolidated statement of income are different from the combined Canadian federal and provincial income tax rates as set out in the following table:

Reconciliation of income taxes

$ millions, for the year ended October 31	2019		2018		2017	
Combined Canadian federal and provincial income tax rate applied to income before income taxes	**$ 1,718**	**26.5 %**	$ 1,777	26.5 %	$ 1,558	26.5 %
Income taxes adjusted for the effect of:						
Earnings of foreign subsidiaries	**(214)**	**(3.3)**	(220)	(3.3)	(137)	(2.3)
Tax-exempt income	**(131)**	**(2.0)**	(203)	(3.0)	(219)	(3.7)
Disposition	**–**	**–**	(1)	–	(26)	(0.4)
Changes in income tax rate on deferred tax balances	**34**	**0.5**	88	1.3	3	–
Impact of equity-accounted income	**(23)**	**(0.4)**	(29)	(0.4)	(25)	(0.4)
Other (including Enron settlement)	**(36)**	**(0.5)**	10	0.1	8	0.1
Income taxes in the consolidated statement of income	**$ 1,348**	**20.8 %**	$ 1,422	21.2 %	$ 1,162	19.8 %

Deferred income taxes

Sources of and movement in deferred tax assets and liabilities

Deferred tax assets

$ millions, for the year ended October 31		Allowance for credit losses	Buildings and equipment	Pension and employee benefits	Provisions	Financial instrument revaluation	Tax loss carry-forwards [1]	Other [2]	Total assets
2019	**Balance at beginning of year before accounting policy changes**	**$ 298**	**$ 12**	**$ 437**	**$ 16**	**$ 66**	**$ 38**	**$ 127**	**$ 994**
	Impact of adopting IFRS 15 at November 1, 2018	**–**	**–**	**–**	**–**	**–**	**–**	**3**	**3**
	Balance at beginning of year after accounting policy changes	**298**	**12**	**437**	**16**	**66**	**38**	**130**	**997**
	Recognized in net income	**(124)**	**14**	**46**	**3**	**(32)**	**(14)**	**20**	**(87)**
	Recognized in OCI	**–**	**–**	**83**	**–**	**(50)**	**–**	**–**	**33**
	Other [3]	**(4)**	**21**	**1**	**1**	**17**	**–**	**7**	**43**
	Balance at end of year	**$ 170**	**$ 47**	**$ 567**	**$ 20**	**$ 1**	**$ 24**	**$ 157**	**$ 986**
2018	Balance at beginning of year under IAS 39	$ 245	$ 69	$ 559	$ 47	$ 124	$ 18	$ 107	$ 1,169
	Impact of adopting IFRS 9 at November 1, 2017	7	–	–	–	20	–	–	27
	Balance at beginning of year under IFRS 9	252	69	559	47	144	18	107	1,196
	Recognized in net income	31	(53)	(45)	(31)	(60)	20	22	(116)
	Recognized in OCI	1	–	(87)	–	(1)	–	–	(87)
	Other [3]	14	(4)	10	–	(17)	–	(2)	1
	Balance at end of year	$ 298	$ 12	$ 437	$ 16	$ 66	$ 38	$ 127	$ 994
2017	Balance at beginning of year	$ 227	$ 88	$ 520	$ 31	$ 25	$ 70	$ 117	$ 1,078
	Recognized in net income	2	(14)	19	15	(26)	(49)	3	(50)
	Recognized in OCI	–	–	(49)	–	19	–	–	(30)
	Acquisitions	14	–	86	–	111	–	10	221
	Other [3]	2	(5)	(17)	1	(5)	(3)	(23)	(50)
	Balance at end of year	$ 245	$ 69	$ 559	$ 47	$ 124	$ 18	$ 107	$ 1,169

Deferred tax liabilities

$ millions, for the year ended October 31		Intangible assets	Buildings and equipment	Pension and employee benefits	Goodwill	Financial instrument revaluation	Foreign currency	Other	Total liabilities
2019	**Balance at beginning of year before accounting policy changes**	**$ (287)**	**$ (47)**	**$ (11)**	**$ (85)**	**$ (12)**	**$ –**	**$ 6**	**$ (436)**
	Impact of adopting IFRS 15 at November 1, 2018	**–**	**–**	**–**	**–**	**–**	**–**	**(5)**	**(5)**
	Balance at beginning of year after accounting policy changes	**(287)**	**(47)**	**(11)**	**(85)**	**(12)**	**–**	**1**	**(441)**
	Recognized in net income	**(16)**	**(12)**	**(1)**	**(1)**	**(4)**	**–**	**13**	**(21)**
	Recognized in OCI	**–**	**–**	**(6)**	**–**	**–**	**–**	**(1)**	**(7)**
	Other [3]	**(12)**	**(9)**	**9**	**2**	**(9)**	**–**	**(19)**	**(38)**
	Balance at end of year	**$ (315)**	**$ (68)**	**$ (9)**	**$ (84)**	**$ (25)**	**$ –**	**$ (6)**	**$ (507)**
2018	Balance at beginning of year under IFRS 9 [4]	$ (329)	$ (52)	$ (10)	$ (93)	$ (17)	$ (1)	$ 30	$ (472)
	Recognized in net income	53	–	3	1	3	–	(13)	47
	Recognized in OCI	–	–	(3)	–	(2)	–	13	8
	Other [3]	(11)	5	(1)	7	4	1	(24)	(19)
	Balance at end of year	$ (287)	$ (47)	$ (11)	$ (85)	$ (12)	$ –	$ 6	$ (436)
2017	Balance at beginning of year	$ (158)	$ (45)	$ (8)	$ (88)	$ (54)	$ 24	$ 1	$ (328)
	Recognized in net income	(19)	(3)	1	(5)	36	–	19	29
	Recognized in OCI	–	–	(5)	–	(13)	–	2	(16)
	Acquisitions	(143)	(7)	–	–	–	–	–	(150)
	Other [3]	(9)	3	2	–	14	(25)	8	(7)
	Balance at end of year	$ (329)	$ (52)	$ (10)	$ (93)	$ (17)	$ (1)	$ 30	$ (472)
Net deferred tax assets as at October 31, 2019									**$ 479**
Net deferred tax assets as at October 31, 2018									$ 558
Net deferred tax assets as at October 31, 2017									$ 697

(1) The tax loss carryforwards include $22 million (2018: $38 million; 2017: $18 million) that relate to operating losses (of which $1 million relate to Canada, $18 million relate to the U.S., and $3 million relate to the Caribbean) that expire in various years commencing in 2020, and $2 million (2018: nil, 2017: nil) that relate to U.S. capital losses that expire in 2024.
(2) Certain information has been restated to conform to the presentation adopted in the current year.
(3) Includes foreign currency translation adjustments.
(4) Transition impact from the adoption of IFRS 9 at November 1, 2017 was nil.

Deferred tax assets and liabilities are assessed by entity for presentation in our consolidated balance sheet. As a result, the net deferred tax assets of $479 million (2018: $558 million) are presented in the consolidated balance sheet as deferred tax assets of $517 million (2018: $601 million) and deferred tax liabilities of $38 million (2018: $43 million).

Unrecognized tax losses

The amount of unused operating tax losses for which deferred tax assets have not been recognized was $1,908 million as at October 31, 2019 (2018: $1,051 million), of which $669 million relates to the U.S. region and $1,239 million (2018: $1,051 million) relates to the Caribbean region. These unused operating tax losses expire within 10 years.

The amount of unused capital tax losses for which deferred tax assets have not been recognized was $611 million as at October 31, 2019 (2018: $614 million). These unused capital tax losses relate to Canada.

U.S. Tax Reforms

On December 22, 2017, the President of the United States signed into law the Tax Cuts and Jobs Act (U.S. tax reforms), which reduced the U.S. federal corporate income tax rate to 21% effective January 1, 2018, resulting in a significant decrease in CIBC's U.S. deferred tax assets in the first quarter of 2018. The U.S. tax reforms introduced other important changes to U.S. corporate income tax laws including the creation of a new Base Erosion Anti-abuse Tax (BEAT) that subjects certain payments from a U.S. corporation to foreign related parties to additional taxes. In December 2018 and 2019, the Internal Revenue Service released proposed and final regulations to implement certain aspects of the U.S. tax reforms, including BEAT. CIBC continues to evaluate the impact of these regulations on our U.S. operations.

Enron

In prior years, the Canada Revenue Agency (CRA) issued reassessments disallowing the deduction of approximately $3 billion of the 2005 Enron settlement payments and related legal expenses (the "Enron expenses"). In January 2019, CIBC entered into a settlement agreement (the "Agreement") with the CRA that provides certainty with respect to the portion of the Enron expenses that are deductible in Canada. The impact of this Agreement resulted in the recognition of a net $38 million tax recovery in the first quarter of 2019. This recovery was determined after taking into account the portion of the Enron expenses that we expect to deduct in the United States, but which has not yet been agreed to by the Internal Revenue Service, and the taxable refund interest that we expect to collect from the CRA upon the reassessment of certain prior year tax returns in accordance with the Agreement. It is possible that adjustments may be required to the amount of the tax benefits recognized in the United States.

Dividend Received Deduction

In prior years, the CRA reassessed CIBC approximately $527 million of additional income tax by denying the tax deductibility of certain 2011 to 2013 Canadian corporate dividends on the basis that they were part of a "dividend rental arrangement". In March 2018, CIBC filed a Notice of Appeal with the Tax Court of Canada with respect to the 2011 taxation year. The matter is now in litigation. The circumstances of the dividends subject to the reassessments are similar to those prospectively addressed by the rules in the 2015 and 2018 Canadian federal budgets. In May 2019, the CRA reassessed CIBC in respect of the 2014 taxation year for approximately $273 million of additional income tax. It is possible that subsequent years may be reassessed for similar activities. CIBC is confident that its tax filing positions were appropriate and intends to defend itself vigorously. Accordingly, no amounts have been accrued in the consolidated financial statements.

Note 20 | Earnings per share

$ millions, except per share amounts, for the year ended October 31	2019	2018	2017
Basic EPS			
Net income attributable to equity shareholders	**$ 5,096**	$ 5,267	$ 4,699
Less: preferred share dividends and premiums	**111**	89	52
Net income attributable to common shareholders	**4,985**	5,178	4,647
Weighted-average common shares outstanding (thousands)	**444,324**	443,082	412,636
Basic EPS	**$ 11.22**	$ 11.69	$ 11.26
Diluted EPS			
Net income attributable to common shareholders	**$ 4,985**	$ 5,178	$ 4,647
Weighted-average common shares outstanding (thousands)	**444,324**	443,082	412,636
Add: stock options potentially exercisable [(1)] (thousands)	**702**	1,111	827
Add: restricted shares and equity-settled consideration (thousands)	**431**	434	100
Weighted-average diluted common shares outstanding (thousands)	**445,457**	444,627	413,563
Diluted EPS	**$ 11.19**	$ 11.65	$ 11.24

(1) Excludes average options outstanding of 2,319,723 with a weighted-average exercise price of $114.29 (2018: 688,123 with a weighted-average exercise price of $120.02; 2017: 729,807 with a weighted-average exercise price of $111.69), as the options' exercise prices were greater than the average market price of common shares.

Note 21 | Commitments, guarantees and pledged assets

Commitments

Credit-related arrangements

Credit-related arrangements are generally off-balance sheet instruments and are typically entered into to meet the financing needs of clients. In addition, there are certain exposures for which we could be obligated to extend credit that are not recorded on the consolidated balance sheet. Our policy of requiring collateral or other security to support credit-related arrangements and the types of security held is generally the same as for loans. The contract amounts presented below for credit-related arrangements represent the maximum amount of additional credit that we could be obligated to extend. The contract amounts also represent the additional credit risk amounts should the contracts be fully drawn, the counterparties default and any collateral held proves to be of no value. As many of these arrangements will expire or terminate without being drawn upon, the contract amounts are not necessarily indicative of future cash requirements or actual risk of loss.

$ millions, as at October 31	**2019**	2018
	Contract amounts	
Securities lending [1]	**$ 44,220**	$ 51,550
Unutilized credit commitments [2]	**241,038**	224,746
Backstop liquidity facilities	**10,870**	10,520
Standby and performance letters of credit	**13,489**	13,242
Documentary and commercial letters of credit	**224**	199
Other commitments to extend credit [3]	**2,937**	138
	$ 312,778	$ 300,395

(1) Excludes securities lending of $1.8 billion (2018: $2.7 billion) for cash because it is reported on the consolidated balance sheet.
(2) Includes $122.0 billion (2018: $116.5 billion) of personal, home equity and credit card lines, which are unconditionally cancellable at our discretion.
(3) Certain prior period amounts have been revised from those previously presented.

In addition, the client securities lending of the joint ventures which CIBC has with The Bank of New York Mellon totalled $77.6 billion (2018: $81.2 billion) of which $6.7 billion (2018: $7.8 billion) are transactions between CIBC and the joint ventures.

CIBC has provided indemnities to customers of the joint ventures in respect of securities lending transactions with third parties amounting to $67.8 billion (2018: $70.6 billion).

Securities lending

Securities lending represents our credit exposure when we lend our own or our clients' securities to a borrower and the borrower defaults on the redelivery obligation. The borrower must fully collateralize the security lent at all times.

Unutilized credit commitments

Unutilized credit commitments are the undrawn portion of lending facilities that we have approved to meet the requirements of clients. These lines may include various conditions that must be satisfied prior to drawdown and include facilities extended in connection with contingent acquisition financing. The credit risk associated with these lines arises from the possibility that a commitment will be drawn down as a loan at some point in the future, prior to the expiry of the commitment. The amount of collateral obtained, if deemed necessary, is based on our credit evaluation of the borrower and may include a charge over the present and future assets of the borrower.

Backstop liquidity facilities

We provide irrevocable backstop liquidity facilities primarily to ABCP conduits. We are the financial services agent for some of these conduits, while other conduits are administered by third parties. The liquidity facilities for our sponsored ABCP programs, Safe Trust, Sure Trust, and Sound Trust, require us to provide funding, subject to the satisfaction of certain limited conditions with respect to the conduits, to fund non-defaulted assets.

Standby and performance letters of credit

These represent an irrevocable obligation to make payments to third parties in the event that clients are unable to meet their contractual financial or performance obligations. The credit risk associated with these instruments is essentially the same as that involved in extending irrevocable loan commitments to clients. The amount of collateral obtained, if deemed necessary, is based on our credit evaluation of the borrower and may include a charge over present and future assets of the borrower.

Documentary and commercial letters of credit

Documentary and commercial letters of credit are short-term instruments issued on behalf of a client, authorizing a third party, such as an exporter, to draw drafts on CIBC up to a specified amount, subject to specific terms and conditions. We are at risk for any drafts drawn that are not ultimately settled by the client; however, the amounts drawn are collateralized by the related goods.

Other commitments to extend credit

These represent other commitments to extend credit, and primarily include forward-dated securities financing trades in the form of securities purchased under resale agreements with various counterparties that are executed on or before the end of our reporting period and that settle shortly after period end, usually within five business days.

Operating lease commitments[1]

Future minimum lease payments and receipts for operating lease commitments for each of the five succeeding years and thereafter are as follows:

$ millions, as at October 31, 2019	Operating leases	
	Payments	Receipts [2]
2020	$ 510	$ 132
2021	529	136
2022	484	138
2023	420	139
2024	351	138
2025 and thereafter	3,253	1,164

(1) Payments include expenses related to base rent, taxes and estimated operating expenses, and exclude expenses related to certain servicing arrangements. Total rental payments in 2019 were $499 million (2018: $494 million, 2017: $476 million).
(2) Includes sub-lease income from a finance lease property, a portion of which is rented out and considered an investment property.

Finance lease commitments[1]

Future minimum lease payments for finance lease commitments for each of the five succeeding years and thereafter are as follows:

$ millions, as at October 31, 2019	
2020	$ 50
2021	48
2022	45
2023	42
2024	41
2025 and thereafter	245
	471
Less: future interest charges	144
Present value of finance lease commitments	$ 327

(1) Total interest expense related to finance lease arrangements was $24 million (2018: $25 million; 2017: $28 million).

Other commitments

As an investor in merchant banking activities, we enter into commitments to fund external private equity funds. In connection with these activities, we had commitments to invest up to $258 million (2018: $194 million).

In addition, we act as underwriter for certain new issuances under which we alone or together with a syndicate of financial institutions purchase these new issuances for resale to investors. As at October 31, 2019, the related underwriting commitments were $60 million (2018: $176 million).

Guarantees and other indemnification agreements

Guarantees

A guarantee is a contract that requires the issuer to make specified payments to reimburse the holder for a loss it incurs because a specified debtor failed to make payment when due in accordance with the original or modified terms of a debt instrument. Guarantees include standby and performance letters of credit as discussed above, and credit derivatives protection sold, as discussed in Note 12.

Other indemnification agreements

In the ordinary course of operations, we enter into contractual arrangements under which we may agree to indemnify the counterparty to such arrangement from any losses relating to a breach of representations and warranties, a failure to perform certain covenants, or for claims or losses arising from certain external events as outlined within the particular contract. This may include, for example, losses arising from changes in tax legislation, litigation, or claims relating to past performance. In addition, we indemnify each of our directors and officers, to the extent permitted by law, against any and all claims or losses (including any amounts paid in settlement of any such claims) incurred as a result of their service to CIBC. In most indemnities, maximum loss clauses are generally not provided for, and as a result, no defined limit of the maximum potential liability exists. Amounts are accrued when we have a present legal or constructive obligation as a result of a past event, when it is both probable that an outflow of economic benefits will be required to resolve the matter, and when a reliable estimate can be made of the amount of the obligation. We believe that the likelihood of the conditions arising to trigger obligations under these contract arrangements is remote. Historically, any payments made in respect of these contracts have not been significant. Amounts related to these indemnifications, representations, and warranties reflected within the consolidated financial statements as at October 31, 2019 and 2018 are not significant.

Pledged assets

In the normal course of business, on-and off-balance sheet assets are pledged as collateral against liabilities. The following table summarizes asset pledging amounts and the activities to which they relate:

$ millions, as at October 31	**2019**	2018
Assets pledged in relation to:		
Securities lending	**$ 46,242**	$ 47,894
Obligations related to securities sold under repurchase agreements	**51,942**	31,058
Obligations related to securities sold short	**15,635**	13,782
Securitizations	**19,398**	22,893
Covered bonds	**20,206**	21,544
Derivatives	**12,952**	11,680
Foreign governments and central banks [1]	**784**	686
Clearing systems, payment systems, and depositories [2]	**2,400**	5,867
Other	**1,247**	675
	$ 170,806	$ 156,079

(1) Includes assets pledged to maintain access to central bank facilities in foreign jurisdictions.
(2) Includes assets pledged in order to participate in clearing and payment systems and depositories.

Note 22 | Contingent liabilities and provisions

In the ordinary course of its business, CIBC is a party to a number of legal proceedings, including regulatory investigations, in which claims for substantial monetary damages are asserted against CIBC and its subsidiaries. Legal provisions are established if, in the opinion of management, it is both probable that an outflow of economic benefits will be required to resolve the matter, and a reliable estimate can be made of the amount of the obligation. If the reliable estimate of probable loss involves a range of potential outcomes within which a specific amount appears to be a better estimate, that amount is accrued. If no specific amount within the range of potential outcomes appears to be a better estimate than any other amount, the mid-point in the range is accrued. In some instances, however, it is not possible either to determine whether an obligation is probable or to reliably estimate the amount of loss, in which case no accrual can be made.

While there is inherent difficulty in predicting the outcome of legal proceedings, based on current knowledge and in consultation with legal counsel, we do not expect the outcome of these matters, individually or in aggregate, to have a material adverse effect on our consolidated financial statements. However, the outcome of these matters, individually or in aggregate, may be material to our operating results for a particular reporting period. We regularly assess the adequacy of CIBC's litigation accruals and make the necessary adjustments to incorporate new information as it becomes available.

CIBC considers losses to be reasonably possible when they are neither probable nor remote. It is reasonably possible that CIBC may incur losses in addition to the amounts recorded when the loss accrued is the mid-point of a range of reasonably possible losses, or the potential loss pertains to a matter in which an unfavourable outcome is reasonably possible but not probable.

CIBC believes the estimate of the aggregate range of reasonably possible losses, in excess of the amounts accrued, for its significant legal proceedings, where it is possible to make such an estimate, is from nil to approximately $1.1 billion as at October 31, 2019. This estimated aggregate range of reasonably possible losses is based upon currently available information for those significant proceedings in which CIBC is involved, taking into account CIBC's best estimate of such losses for those cases for which an estimate can be made. CIBC's estimate involves significant judgment, given the varying stages of the proceedings and the existence of multiple defendants in many of such proceedings whose share of the liability has yet to be determined. The range does not include potential punitive damages and interest. The matters underlying the estimated range as at October 31, 2019 consist of the significant legal matters disclosed below. The matters underlying the estimated range will change from time to time, and actual losses may vary significantly from the current estimate. For certain matters, CIBC does not believe that an estimate can currently be made as many of them are in preliminary stages and certain matters have no specific amount claimed. Consequently, these matters are not included in the range.

The following is a description of CIBC's significant legal proceedings, which we intend to vigorously defend.

Green v. Canadian Imperial Bank of Commerce, et al.

In July 2008, a shareholder plaintiff commenced this proposed class action in the Ontario Superior Court of Justice against CIBC and several former and current CIBC officers and directors. It alleges that CIBC and the individual officers and directors violated the *Ontario Securities Act* through material misrepresentations and non-disclosures relating to CIBC's exposure to the U.S. sub-prime mortgage market. The plaintiffs instituted this action on behalf of all CIBC shareholders in Canada who purchased shares between May 31, 2007 and February 28, 2008. The action seeks damages of $10 billion. In July 2012, the plaintiffs' motions for leave to file the statement of claim and for class certification were dismissed by the Ontario Superior Court of Justice. In February 2014, the Ontario Court of Appeal released its decision overturning the lower court and allowing the matter to proceed as a certified class action. In August 2014, CIBC and the individual defendants were granted leave to appeal to the Supreme Court of Canada. The defendants' appeal to the Supreme Court of Canada was heard on February 9, 2015. In December 2015, the Supreme Court of Canada upheld the Ontario Court of Appeal's decision allowing the matter to proceed as a certified class action. No date has been set for a motion for summary judgment.

Fresco v. Canadian Imperial Bank of Commerce
Gaudet v. Canadian Imperial Bank of Commerce

In June 2007, two proposed class actions were filed against CIBC in the Ontario Superior Court of Justice *(Fresco v. CIBC)* and in the Quebec Superior Court *(Gaudet v. CIBC)*. Each makes identical claims for unpaid overtime for full-time, part-time, and retail frontline non-management employees. The Ontario action seeks $500 million in damages plus $100 million in punitive damages for all employees in Canada, while the Quebec action is limited to employees in Quebec and has been stayed pending the outcome of the Ontario action. In June 2009, in the Ontario action, the motion judge denied certification of the matter as a class action. In September 2010, the Ontario Divisional Court upheld the motion judge's denial of the plaintiff's certification motion and the award of costs to CIBC by a two-to-one majority. In January 2011, the Ontario Court of Appeal granted the plaintiff leave to appeal the decision denying certification. In June 2012, the Ontario Court of Appeal overturned the lower court and granted certification of the matter as a class action. The Supreme Court of Canada released its decision in March 2013 denying CIBC leave to appeal certification of the matter as a class action, and denying the plaintiff's cross appeal on aggregate damages. The plaintiff's motion for summary judgment that was scheduled for September 2019 has been adjourned to December 2019.

Credit card class actions – Quebec Consumer Protection Act:

Marcotte v. Bank of Montreal, et al.
Corriveau v. Amex Bank of Canada, et al.
Lamoureux v. Bank of Montreal, et al.
St. Pierre v. Bank of Montreal, et al.
Marcotte v. Bank of Montreal, et al. (II)
Giroux v. Royal Bank of Canada, et al.
Pilon v. Amex Bank of Canada, et al.

Since 2004, a number of proposed class actions have been filed in the Quebec Superior Court against CIBC and numerous other financial institutions. The actions, brought on behalf of cardholders, allege that the financial institutions are in breach of certain provisions of the *Quebec Consumer Protection Act* (CPA). The alleged violations include charging fees on foreign currency transactions, charging fees on cash advances, increasing credit limits without the cardholder's express consent, and failing to allow a 21-day grace period before posting charges to balances upon which interest is calculated. CIBC and the other defendant banks are jointly raising a constitutional challenge to the Quebec CPA on the basis that banks are not required to comply with provincial legislation because banking and cost of borrowing disclosure is a matter of exclusive federal jurisdiction.

The first of these class actions (*Marcotte v. Bank of Montreal, et al.*), which alleges that charging cardholders fees on foreign currency transactions violates the Quebec CPA, went to trial in 2008. In a decision released in June 2009, the trial judge found in favour of the plaintiffs concluding that the Quebec CPA is constitutionally applicable to federally regulated financial institutions and awarding damages against all the defendants. The court awarded compensatory damages against CIBC in the amount of $38 million plus an additional sum to be determined at a future date. The court awarded punitive damages against a number of the other defendants, but not against CIBC. CIBC and the other financial institutions appealed this decision. The appeal was heard by the Quebec Court of Appeal in September 2011. In August 2012, the Quebec Court of Appeal allowed the defendant banks' appeals in part and overturned the trial judgment against CIBC. The plaintiffs and some of the defendant banks appealed to the Supreme Court of Canada, and that appeal was heard in February 2014. On September 19, 2014, the Supreme Court of Canada found that the relevant provisions of the Quebec CPA were constitutionally applicable to the banks, but that CIBC is not liable for damages because it fully complied with the Quebec CPA.

The *Giroux* and *Marcotte II* proposed class actions were discontinued in January 2015.

The *Lamoureux*, *St. Pierre* and *Corriveau* actions were settled in 2016 subject to court approval. Pursuant to the proposed settlement, CIBC was to pay $4.25 million to settle these three actions. The court approval hearing was held in December 2016. In January 2017, the court did not approve CIBC's proposed settlement as it found the fees for plaintiffs' counsel were excessive and the end date for one of the actions was later than required. The plaintiffs' appeal was heard in September 2017 and the appeal was dismissed in March 2018. In July 2019, following renegotiation of certain of the terms of the settlement, the court approved the settlement. The amount of the approved settlement for these actions remained at $4.25 million. The *Lamoureux, St. Pierre,* and *Corriveau* class actions are now settled.

The *Pilon* proposed class action was commenced in January 2018 in Quebec against CIBC and several other financial institutions. The plaintiffs allege that the defendants breached the Quebec CPA and the *Bank Act* when they unilaterally increased the credit limit on the plaintiffs' credit cards. The claim seeks the return of all over limit fees charged to Quebec customers beginning in January 2015 as well as punitive damages of $500 per class member. The motion for class certification in *Pilon* was heard in April 2019. In August 2019, the court dismissed the certification motion. The plaintiff is appealing the decision.

Credit card class actions – Interchange fees litigation:

Bancroft-Snell v. Visa Canada Corporation, et al.
9085-4886 Quebec Inc. v. Visa Canada Corporation, et al.
Watson v. Bank of America Corporation, et al.
Fuze Salon 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.
Hello Baby Equipment Inc. v. BofA Canada Bank, et al.

Since 2011 seven proposed class actions have been commenced against VISA Canada Corporation (Visa), MasterCard International Incorporated (MasterCard), CIBC and numerous other financial institutions. The actions, brought on behalf of all merchants who accepted payment by Visa or MasterCard from March 23, 2001 to the present, allege two "separate, but interrelated" conspiracies: one in respect of Visa and one in respect of MasterCard. The claims allege that Visa and MasterCard conspired with their issuing banks to set default interchange rate and merchant discount fees and that certain rules (Honour All Cards and No Surcharge) have the effect of increasing the merchant discount fees. The claims allege civil conspiracy, violation of the *Competition Act*, interference with economic interests and unjust enrichment. The claims seek unspecified general and punitive damages. The motion for class certification in *Watson* was granted in March 2014. The appeal of the decision granting class certification was heard in December 2014. In August 2015, the British Columbia Court of Appeal allowed the appeals in part, resulting in certain causes of action being struck and others being reinstated. The matter remains certified as a class action. The trial in *Watson is* scheduled to commence in October 2020. The motion for class certification in *9085-4886 Quebec Inc.* (formerly *Bakopanos*) was heard in November 2017. In February 2018, the Court certified *9085-4886 Quebec Inc.* as a class action. In May 2019, the plaintiffs' appeal of the certification decision in *9085-4886 Quebec Inc*. was heard and in July 2019, the Quebec Court of Appeal allowed the plaintiffs' appeal.

Mortgage prepayment class actions:

Jordan v. CIBC Mortgages Inc.
Lamarre v. CIBC Mortgages Inc.
Sherry v. CIBC Mortgages Inc.
Haroch v. Toronto Dominion Bank, et al.

In 2011, three proposed class actions were filed in the Superior Courts of Ontario, Quebec and British Columbia against CIBC Mortgages Inc. The representative plaintiffs allege that since 2005, CIBC Mortgages Inc. wrongfully charged or overcharged mortgage prepayment penalties and that the calculation clauses in the mortgage contract that provide for discretion in applying the prepayment penalties are void and unenforceable at law. The motion for class certification in *Sherry* was granted in June 2014 conditional on the plaintiffs framing a workable class definition. In July 2014, CIBC filed a Notice of Appeal. CIBC's appeal of the certification decision in *Sherry* was heard in April 2016. The court reserved its decision. In June 2016, the British Columbia Court of Appeal allowed the appeal in *Sherry* in part, resulting in certain causes of action being struck. *Sherry* remains certified as a class action, and continuation of the certification motion on the amended pleading was heard November 2017. In August 2018, the court certified certain of the plaintiffs' causes of action in

Sherry. The appeal in *Sherry* was heard in April 2019. The court reserved its decision. The certification motion in Jordan was heard in August 2018. In February 2019, the court certified *Jordan* as a class action. CIBC's motion for leave to appeal the certification decision in *Jordan* was denied in June 2019.

In May 2018, a new proposed class action, *Haroch,* was filed in the Superior Court of Quebec. The action is brought on behalf of Quebec residents who during the class period allegedly paid a mortgage prepayment charge in excess of three months' interest. The plaintiffs allege that the defendants created complex prepayment formulas that are contrary to the *Quebec Civil Code*, the *Quebec Consumer Protection Act* and the *Interest Act* and seek damages back to 2015. *Haroch* and *Lamarre* have been consolidated. The motion for class certification in *Haroch* was heard in June 2019 and in July 2019, the court certified the matter as a class action against CIBC and CIBC Mortgages Inc. CIBC and CIBC Mortgages Inc. are seeking leave to appeal the certification decision. The leave motion is scheduled for January 2020.

Cerberus Capital Management L.P. v. CIBC

In October 2015, Securitized Asset Funding 2011-2, LTD., a special purpose investment vehicle affiliated with Cerberus Capital Management L.P. (collectively, "Cerberus"), commenced a Federal Court action in New York against CIBC seeking unspecified damages of "at least hundreds of millions of dollars". The action relates to two transactions in 2008 and 2011 in which CIBC issued a limited recourse note and certificate to Cerberus which significantly reduced CIBC's exposure to the U.S. residential real estate market. The complaint alleges that CIBC breached its contract with Cerberus by failing to appropriately calculate and pay with respect to two of the payment streams due under the 2008 note and 2011 certificate.

In November 2015, Cerberus voluntarily dismissed the Federal Court action and filed a new action asserting the same claims in New York State Court. In January 2016, CIBC served its Answer and Counterclaims. In March 2016, Cerberus filed a motion for summary judgment and sought to stay discovery. In April 2016, the court directed the parties to start discovery. In April 2018, the court denied the plaintiffs' motion for summary judgment. The plaintiffs appealed the decision, which was heard in November 2018. In December 2018, the appellate court affirmed the lower court's denial of the plaintiffs' motion for summary judgment.

Fire & Police Pension Association of Colorado v. Bank of Montreal, et al.

In January 2018, a proposed class action was filed in the U.S. District Court for the Southern District of New York against CIBC, CIBC World Markets Corp., CIBC World Markets Inc. and several other financial institutions. The complaint alleges that the defendant financial institutions conspired to depress a benchmark interest rate called the Canadian Dealer Offered Rate (CDOR) by making coordinated, artificially low submissions to the survey used to calculate the CDOR. The plaintiffs allege that a depressed CDOR benefitted defendants as parties to derivatives transactions that settled by reference to that rate. The complaint asserts claims under the antitrust laws and the *Commodity Exchange Act*, among others. The representative plaintiff seeks to represent a putative class of entities that engaged in U.S.-based transactions in financial instruments that were priced, benchmarked, and/or settled based on CDOR between August 9, 2007 and June 30, 2014. In March 2018, the plaintiff delivered an amended claim extending the class period to December 2014. The defendants brought motions to dismiss, which the court granted in March 2019. In April 2019, the plaintiff filed a notice of intent to appeal the decision. In July 2019, the plaintiff withdrew the case with prejudice. This matter is now closed.

Valeant class actions:

Catucci v. Valeant Pharmaceuticals International Inc., et al.
Potter v. Valeant Pharmaceuticals International Inc., et al.

In March 2016, a proposed class action was filed in the Quebec Superior Court on behalf of purchasers of shares in Valeant Pharmaceuticals International Inc. against the issuer, its directors and officers, its auditors and the underwriting syndicates for six public offerings from 2013 to 2015. CIBC World Markets Corp. was part of the underwriting syndicate for three of the offerings (underwriting 1.5% of a US$1.6 billion offering in June 2013, 1.5% of a US$900 million offering in December 2013 and 0.625% of an offering comprising US$5.25 billion and €1.5 billion in March 2015). The proposed class action alleges various misrepresentations on the part of Valeant and the other defendants, including representations made in the prospectus of the public offerings, relating to Valeant's relationships with various "specialty pharmacies" who were allegedly acting improperly in the distribution of Valeant's products resulting in Valeant's operational results, revenues, and share price during the relevant period being artificially inflated. In July 2016, a similar proposed class action (*Potter v. Valeant Pharmaceuticals International Inc., et al.*) was commenced in New Jersey Federal Court.

The motion for class certification in *Catucci* and motion to dismiss in *Potter* were heard in April 2017. In September 2017, the court certified *Catucci* as a class action. The defendants sought leave to appeal the certification decision, which was dismissed in December 2017. In *Potter* the court dismissed the action against the underwriters, without prejudice to the plaintiff to re-plead its allegations.

Simplii Privacy Class Actions

Bannister v. CIBC (formerly John Doe v. CIBC)
Steinman v. CIBC

In June 2018, two proposed class actions were filed against CIBC on behalf of Simplii Financial clients who allege their personal information was disclosed as a result of a security incident in May 2018. The actions allege that Simplii Financial failed to protect its clients' personal information. The *Bannister* proposed class action seeks aggregated damages of approximately $550 million, while the *Steinman* proposed class action, which has been stayed, sought damages per class member plus punitive damages of $20 million. The motion for certification in *Bannister*, which was scheduled for October 2019, has been adjourned to December 2019.

Pozgaj v. CIBC and CIBC Trust

In September 2018, a proposed class action was filed in the Ontario Superior Court against CIBC and CIBC Trust. It alleges that the defendants should not have paid mutual fund trailing commissions to order-execution-only-dealers. The action is brought on behalf of all persons who held units of CIBC mutual funds through order-execution-only-dealers and seeks $200 million in damages.

York County on Behalf of the County of York Retirement Fund v. Rambo, et al.

In February 2019, a class action complaint was filed in the Northern District of California against the directors, certain officers and the underwriters of several senior note offerings of the Pacific Gas and Electric Company (PG&E) that took place between March 2016 and April 2018, the total issuance amount for the series of offerings being approximately US$4 billion. CIBC World Markets Corp. was part of the underwriting syndicate for an offering, whereby CIBC World Markets Corp. underwrote 6% of a US$650 million December 2016 issuance of senior notes. The offering involved the issuance of two tranches of notes: US$400 million of 30-year senior notes maturing in December 2046 and US$250 million of one-year floating rate notes that matured and were repaid in November 2017. The complaint alleges that the disclosure documentation associated with the note offerings contained misrepresentations and/or omissions of material facts, including with respect to PG&E's failure to comply with various safety regulations, vegetation management programs and requirements, as well as understating the extent to which its equipment has allegedly caused multiple fires in California, including before the wildfires that occurred in California in 2017 and 2018. In October 2019, the defendants filed a motion to dismiss.

Legal provisions

The following table presents changes in our legal provisions:

$ millions, for the year ended October 31	2019	2018
Balance at beginning of year	**$ 40**	$ 97
Additional new provisions recognized	**39**	23
Less:		
Amounts incurred and charged against existing provisions	**(8)**	(78)
Unused amounts reversed	**(4)**	(2)
Balance at end of year	**$ 67**	$ 40

Restructuring

The following table presents changes in the restructuring provision:

$ millions, for the year ended October 31	2019	2018
Balance at beginning of year	**$ 71**	$ 149
Additional new provisions recognized	**–**	28
Less:		
Amounts incurred and charged against existing provisions	**(45)**	(70)
Unused amounts reversed	**–**	(36)
Balance at end of year	**$ 26**	$ 71

The amount of $26 million as at October 31, 2019 primarily represents obligations related to ongoing payments as a result of the restructuring.

Note 23 | Concentration of credit risk

Concentration of credit exposure may arise with a group of counterparties that have similar economic characteristics or are located in the same geographic region. The ability of such counterparties to meet contractual obligations would be similarly affected by changing economic, political or other conditions.

The amounts of credit exposure associated with our on- and off-balance sheet financial instruments are summarized in the following table:

Credit exposure by country of ultimate risk

$ millions, as at October 31	2019				2018 (1)			
	Canada	**U.S.**	**Other countries**	**Total**	Canada	U.S.	Other countries	Total
On-balance sheet								
Major assets (2)(3)(4)	**$ 444,317**	**$ 120,286**	**$ 55,844**	**$ 620,447**	$ 431,917	$ 99,063	$ 40,405	$ 571,385
Off-balance sheet								
Credit-related arrangements								
Financial institutions	**$ 47,815**	**$ 13,526**	**$ 12,318**	**$ 73,659**	$ 45,433	$ 16,358	$ 12,258	$ 74,049
Governments	**9,208**	**10**	**14**	**9,232**	9,880	10	50	9,940
Retail	**130,544**	**510**	**432**	**131,486**	124,625	386	390	125,401
Corporate	**61,228**	**28,907**	**8,266**	**98,401**	58,397	25,158	7,450	91,005
	$ 248,795	**$ 42,953**	**$ 21,030**	**$ 312,778**	$ 238,335	$ 41,912	$ 20,148	$ 300,395

(1) Certain prior period amounts have been revised from those previously presented.
(2) Major assets consist of cash and deposits with banks, loans and acceptances net of allowance for credit losses, securities, securities borrowed or purchased under resale agreements, and derivative instruments.
(3) Includes Canadian currency of $426.0 billion (2018: $410.5 billion) and foreign currencies of $194.4 billion (2018: $160.9 billion).
(4) No industry or foreign jurisdiction accounted for more than 10% of loans and acceptances net of allowance for credit losses, with the exception of the U.S., which accounted for 12.1% as at October 31, 2019 (2018: 10.5%).

See Note 12 for derivative instruments by country and counterparty type of ultimate risk.
In addition, see Note 21 for details on the client securities lending of the joint ventures which CIBC has with The Bank of New York Mellon.

Also see shaded sections in "MD&A – Management of risk" for a detailed discussion on our credit risk.

Note 24 | Related-party transactions

In the ordinary course of business, we provide banking services and enter into transactions with related parties on terms similar to those offered to unrelated parties. Related parties include key management personnel[1], their close family members, and entities that they or their close family members control or jointly control. Related parties also include associates and joint ventures accounted for under the equity method, and post-employment benefit plans for CIBC employees. Loans to these related parties are made in the ordinary course of business and on substantially the same terms as for comparable transactions with unrelated parties. As CIBC's subsidiaries are consolidated, transactions with these entities have been eliminated and are not reported as related-party transactions. We offer a subsidy on annual fees and preferential interest rates on credit card balances to senior officers, which is the same offer extended to all employees of CIBC.

Key management personnel and their affiliates

As at October 31, 2019, loans to key management personnel[1] and their close family members and to entities that they or their close family members control or jointly control totalled $239 million (2018: $209 million), letters of credit and guarantees totalled $4 million (2018: $5 million), and undrawn credit commitments totalled $72 million (2018: $59 million).

These outstanding balances are generally unsecured and we have no provision for credit losses on impaired loans relating to these amounts for the years ended October 31, 2019 and 2018.

(1) Key management personnel are defined as those persons having authority and responsibility for planning, directing and controlling the activities of CIBC directly or indirectly and comprise the members of the Board (referred to as directors), and Executive Committee (ExCo) and certain named officers per the *Bank Act* (Canada) (collectively referred to as senior officers). Board members who are also ExCo members are included as senior officers.

Compensation of key management personnel

$ millions, for the year ended October 31		**2019**		2018
	Directors	**Senior officers**	Directors	Senior officers
Short-term benefits [1]	**$ 3**	**$ 23**	$ 2	$ 23
Post-employment benefits	**–**	**3**	–	3
Share-based benefits [2]	**2**	**38**	2	35
Total compensation	**$ 5**	**$ 64**	$ 4	$ 61

(1) Comprises salaries, statutory and non-statutory benefits related to senior officers and fees related to directors recognized during the year. Also includes annual incentive plan payments related to senior officers on a cash basis.
(2) Comprises grant-date fair values of awards granted in the year.

Refer to the following Notes for additional details on related-party transactions:

Share-based payment plans

See Note 17 for details of these plans offered to directors and senior officers.

Post-employment benefit plans

See Note 18 for related-party transactions between CIBC and the post-employment benefit plans.

Equity-accounted associates and joint ventures

See Note 25 for details of our investments in equity-accounted associates and joint ventures.

Note 25 | Investments in equity-accounted associates and joint ventures

Joint ventures

CIBC is a 50/50 joint venture partner with The Bank of New York Mellon in two joint ventures: CIBC Mellon Trust Company and CIBC Mellon Global Securities Services Company, which provide trust and asset servicing, both in Canada. As at October 31, 2019, the carrying value of our investments in the joint ventures was $529 million (2018: $463 million), which was included in Corporate and Other.

As at October 31, 2019, loans to the joint ventures totalled nil (2018: nil) and undrawn credit commitments totalled $128 million (2018: $128 million).

CIBC, The Bank of New York Mellon, and CIBC Mellon have, jointly and severally, provided indemnities to customers of the joint ventures in respect of securities lending transactions. See Note 21 for additional details.

There was no unrecognized share of losses of any joint ventures, either for the year or cumulatively. In 2019 and 2018, none of our joint ventures experienced any significant restrictions to transfer funds in the form of cash dividends or distributions, or repayment of loans or advances.

The following table provides the summarized aggregate financial information related to our proportionate interest in the equity-accounted joint ventures:

$ millions, for the year ended October 31	**2019**	2018	2017
Net income	**$ 88**	$ 106	$ 81
OCI	**45**	(12)	(30)
Total comprehensive income	**$ 133**	$ 94	$ 51

Associates

As at October 31, 2019, the total carrying value of our investments in associates was $57 million (2018: $63 million). These investments comprise: listed associates with a carrying value of $9 million (2018: nil) and a fair value of $9 million (2018: nil); and unlisted associates with a carrying value of $48 million (2018: $63 million) and a fair value of $76 million (2018: $101 million). Of the total carrying value of our investments in associates, $5 million (2018: nil) was included in Canadian Personal and Small Business Banking, nil (2018: $1 million) in Canadian Commercial Banking and Wealth Management, $33 million (2018: $41 million) in Capital Markets, and $19 million (2018: $21 million) in Corporate and Other.

As at October 31, 2019, loans to associates totalled nil (2018: nil) and undrawn credit commitments totalled $79 million (2018: $79 million). We also had commitments to invest up to nil (2018: nil) in our associates.

There was no unrecognized share of losses of any associate, either for the year or cumulatively. In 2019 and 2018, none of our associates experienced any significant restrictions to transfer funds in the form of cash dividends or distributions, or repayment of loans or advances.

The following table provides the summarized aggregate financial information related to our proportionate interest in equity-accounted associates:

$ millions, for the year ended October 31	**2019**	2018	2017
Net income	**$ 4**	$ 15	$ 20
OCI	**(1)**	(7)	6
Total comprehensive income	**$ 3**	$ 8	$ 26

Note 26 | Significant subsidiaries

The following is a list of significant subsidiaries in which CIBC, either directly or indirectly, owns 100% of the voting shares, except where noted.

$ millions, as at October 31, 2019

Subsidiary name (1)	Address of head or principal office	Book value of shares owned by CIBC (2)
Canada and U.S.		
CIBC Asset Management Inc.	Toronto, Ontario, Canada	**$ 444**
CIBC BA Limited	Toronto, Ontario, Canada	**–** (3)
CIBC Bancorp USA Inc.	Chicago, Illinois, U.S.	**9,077**
Canadian Imperial Holdings Inc.	New York, New York, U.S.	
CIBC Inc.	New York, New York, U.S.	
CIBC Capital Corporation	New York, New York, U.S.	
CIBC World Markets Corp.	New York, New York, U.S.	
CIBC Bank USA	Chicago, Illinois, U.S.	
CIBC Private Wealth Group, LLC	Atlanta, Georgia, U.S.	
CIBC Private Wealth Advisors, Inc.	Chicago, Illinois, U.S.	
CIBC National Trust Company	Atlanta, Georgia, U.S.	
CIBC Delaware Trust Company	Wilmington, Delaware, U.S.	
CIBC Investor Services Inc.	Toronto, Ontario, Canada	**25**
CIBC Life Insurance Company Limited	Toronto, Ontario, Canada	**23**
CIBC Mortgages Inc.	Toronto, Ontario, Canada	**230**
CIBC Securities Inc.	Toronto, Ontario, Canada	**2**
CIBC Trust Corporation	Toronto, Ontario, Canada	**591**
CIBC World Markets Inc.	Toronto, Ontario, Canada	**306**
CIBC Wood Gundy Financial Services Inc.	Toronto, Ontario, Canada	
CIBC Wood Gundy Financial Services (Quebec) Inc.	Montreal, Quebec, Canada	
INTRIA Items Inc.	Mississauga, Ontario, Canada	**100**
International		
CIBC Australia Ltd	Sydney, New South Wales, Australia	**19**
CIBC Cayman Holdings Limited	George Town, Grand Cayman, Cayman Islands	**1,742**
CIBC Cayman Bank Limited	George Town, Grand Cayman, Cayman Islands	
CIBC Cayman Capital Limited	George Town, Grand Cayman, Cayman Islands	
CIBC Cayman Reinsurance Limited	George Town, Grand Cayman, Cayman Islands	
CIBC Investments (Cayman) Limited	George Town, Grand Cayman, Cayman Islands	**2,820**
FirstCaribbean International Bank Limited (91.7%)	Warrens, St. Michael, Barbados	
CIBC Bank and Trust Company (Cayman) Limited (91.7%)	George Town, Grand Cayman, Cayman Islands	
CIBC Fund Administration Services (Asia) Limited (91.7%)	Hong Kong, China	
CIBC Trust Company (Bahamas) Limited (91.7%)	Nassau, The Bahamas	
FirstCaribbean International Bank (Bahamas) Limited (87.3%)	Nassau, The Bahamas	
Sentry Insurance Brokers Ltd. (87.3%)	Nassau, The Bahamas	
FirstCaribbean International Bank (Barbados) Limited (91.7%)	Warrens, St. Michael, Barbados	
FirstCaribbean International Finance Corporation (Leeward & Windward) Limited (91.7%)	Castries, St. Lucia	
FirstCaribbean International Securities Limited (91.7%)	Kingston, Jamaica	
FirstCaribbean International Bank (Cayman) Limited (91.7%)	George Town, Grand Cayman, Cayman Islands	
FirstCaribbean International Finance Corporation (Netherlands Antilles) N.V. (91.7%)	Curacao, Netherlands Antilles	
FirstCaribbean International Bank (Curacao) N.V. (91.7%)	Curacao, Netherlands Antilles	
FirstCaribbean International Bank (Jamaica) Limited (91.7%)	Kingston, Jamaica	
FirstCaribbean International Bank (Trinidad and Tobago) Limited (91.7%)	Maraval, Port of Spain, Trinidad & Tobago	
FirstCaribbean International Wealth Management Bank (Barbados) Limited (91.7%)	Warrens, St. Michael, Barbados	
CIBC World Markets (Japan) Inc.	Tokyo, Japan	**48**
CIBC World Markets plc	London, United Kingdom	**490**

(1) Each subsidiary is incorporated or organized under the laws of the state or country in which the principal office is situated, except for Canadian Imperial Holdings Inc., CIBC Inc., CIBC Capital Corporation, CIBC World Markets Corp., CIBC Private Wealth Group, LLC, CIBC Private Wealth Advisors, Inc., and CIBC Bancorp USA Inc., which were incorporated or organized under the laws of the State of Delaware, U.S.; CIBC National Trust Company, which was organized under the laws of the United States; and CIBC World Markets (Japan) Inc., which was incorporated in Barbados.
(2) The book value of shares of subsidiaries is shown at cost and may include non-voting common and preferred shares. These amounts are eliminated upon consolidation.
(3) The book value of shares owned by CIBC is less than $1 million.

In addition to the above, we consolidate certain SEs where we have control over the SE. See Note 6 for additional details.

Note 27 | Financial instruments – disclosures

Certain disclosures required by IFRS 7 are provided in the shaded sections of the "MD&A – Management of risk", as permitted by IFRS. The following table provides a cross referencing of those disclosures to the MD&A.

Description	Section
For each type of risk arising from financial instruments, an entity shall disclose: the exposure to risks and how they arise; objectives, policies and processes used for managing the risks; methods used to measure the risk; and description of collateral.	Risk overview Credit risk Market risk Liquidity risk Operational risk Reputation, conduct and legal risk Regulatory compliance risk
Credit risk: gross exposure to credit risk, credit quality and concentration of exposures.	Credit risk
Market risk: trading portfolios – Value-at-Risk (VaR); stressed VaR, incremental risk charge, non-trading portfolios – interest rate risk, foreign exchange risk and equity risk.	Market risk
Liquidity risk: liquid assets, maturity of financial assets and liabilities, and credit commitments.	Liquidity risk

We have provided quantitative disclosures related to credit risk consistent with Basel guidelines in the "Credit risk" section of the MD&A. The table below sets out the categories of the on-balance sheet exposures that are subject to the credit risk framework as set out in the Capital Adequacy Requirements (CAR) Guideline issued by OSFI under the different Basel approaches based on the carrying value of those exposures in our consolidated financial statements. The credit risk framework includes counterparty credit risk exposures arising from OTC derivatives, repo-style transactions and trades cleared through CCPs, as well as securitization exposures. Items not subject to the credit risk framework include exposures that are subject to the market risk framework, amounts that are not subject to capital requirements or are subject to deduction from capital, and amounts relating to CIBC's insurance subsidiaries, which are excluded from the scope of regulatory consolidation.

$ millions, as at October 31		AIRB approach	Standardized approach	Other credit risk [1]	Total subject to credit risk	Not subject to credit risk	Total consolidated balance sheet
2019	**Cash and deposits with banks**	**$ 11,247**	**$ 3,840**	**$ 1,627**	**$ 16,714**	**$ 645**	**$ 17,359**
	Securities	**68,960**	**9,687**	**–**	**78,647**	**42,663**	**121,310**
	Cash collateral on securities borrowed	**3,663**	**1**	**–**	**3,664**	**–**	**3,664**
	Securities purchased under resale agreements	**56,111**	**–**	**–**	**56,111**	**–**	**56,111**
	Loans	**348,100**	**39,068**	**970**	**388,138**	**2,718**	**390,856**
	Allowance for credit losses	**(1,465)**	**(450)**	**–**	**(1,915)**	**–**	**(1,915)**
	Derivative instruments	**23,821**	**74**	**–**	**23,895**	**–**	**23,895**
	Customers' liability under acceptances	**9,167**	**–**	**–**	**9,167**	**–**	**9,167**
	Other assets	**15,879**	**385**	**6,074**	**22,338**	**8,819**	**31,157**
	Total credit exposures	**$ 535,483**	**$ 52,605**	**$ 8,671**	**$ 596,759**	**$ 54,845**	**$ 651,604**
2018	Total credit exposures	$ 485,004	$ 45,529	$ 8,692	$ 539,225	$ 57,874	$ 597,099

(1) Includes credit risk exposures arising from other assets that are subject to the credit risk framework but are not included in the standardized or AIRB frameworks, including other balance sheet assets which are risk-weighted at 100%, significant investments in the capital of non-financial institutions, and amounts below the thresholds for capital deduction that are risk-weighted at 250%.

Note 28 Offsetting financial assets and liabilities

The following table identifies the amounts that have been offset on the consolidated balance sheet in accordance with the requirements of IAS 32 "Financial Instruments: Presentation", and also those amounts that are subject to enforceable netting agreements but do not qualify for offsetting on the consolidated balance sheet either because we do not have a currently enforceable legal right to set-off the recognized amounts, or because we do not intend to settle on a net basis or to realize the asset and settle the liability simultaneously.

Financial assets

	Amounts subject to enforceable netting agreements							
				Related amounts not set-off on the consolidated balance sheet				
$ millions, as at October 31	Gross amounts of recognized financial assets	Gross amounts offset on the consolidated balance sheet [1]	Net amounts	Financial instruments [2]	Collateral received [3]	Net amounts	Amounts not subject to enforceable netting agreements [4]	Net amounts presented on the consolidated balance sheet
2019								
Derivatives	**$ 42,156**	**$ (21,206)**	**$ 20,950**	**$ (14,572)**	**$ (3,888)**	**$ 2,490**	**$ 2,945**	**$ 23,895**
Cash collateral on securities borrowed	**3,664**	**–**	**3,664**	**–**	**(3,588)**	**76**	**–**	**3,664**
Securities purchased under resale agreements	**59,131**	**(3,020)**	**56,111**	**–**	**(55,721)**	**390**	**–**	**56,111**
	$ 104,951	**$ (24,226)**	**$ 80,725**	**$ (14,572)**	**$ (63,197)**	**$ 2,956**	**$ 2,945**	**$ 83,670**
2018								
Derivatives	$ 33,862	$ (14,750)	$ 19,112	$ (11,789)	$ (4,794)	$ 2,529	$ 2,319	$ 21,431
Cash collateral on securities borrowed	5,488	–	5,488	–	(5,406)	82	–	5,488
Securities purchased under resale agreements	45,028	(1,578)	43,450	–	(43,358)	92	–	43,450
	$ 84,378	$ (16,328)	$ 68,050	$ (11,789)	$ (53,558)	$ 2,703	$ 2,319	$ 70,369

Financial liabilities

	Amounts subject to enforceable netting agreements							
				Related amounts not set-off on the consolidated balance sheet				
$ millions, as at October 31	Gross amounts of recognized financial liabilities	Gross amounts offset on the consolidated balance sheet [1]	Net amounts	Financial instruments [2]	Collateral pledged [3]	Net amounts	Amounts not subject to enforceable netting agreements [4]	Net amounts presented on the consolidated balance sheet
2019								
Derivatives	**$ 43,941**	**$ (21,206)**	**$ 22,735**	**$ (14,572)**	**$ (6,840)**	**$ 1,323**	**$ 2,378**	**$ 25,113**
Cash collateral on securities lent	**1,822**	**–**	**1,822**	**–**	**(1,779)**	**43**	**–**	**1,822**
Obligations related to securities sold under repurchase agreements	**54,821**	**(3,020)**	**51,801**	**–**	**(51,343)**	**458**	**–**	**51,801**
	$ 100,584	**$ (24,226)**	**$ 76,358**	**$ (14,572)**	**$ (59,962)**	**$ 1,824**	**$ 2,378**	**$ 78,736**
2018								
Derivatives	$ 33,358	$ (14,750)	$ 18,608	$ (11,789)	$ (5,539)	$ 1,280	$ 2,365	$ 20,973
Cash collateral on securities lent	2,731	–	2,731	–	(2,697)	34	–	2,731
Obligations related to securities sold under repurchase agreements	32,418	(1,578)	30,840	–	(30,780)	60	–	30,840
	$ 68,507	$ (16,328)	$ 52,179	$ (11,789)	$ (39,016)	$ 1,374	$ 2,365	$ 54,544

(1) Comprises amounts related to financial instruments which qualify for offsetting. Effective beginning in 2017, derivatives cleared through the Chicago Mercantile Exchange (CME) are considered to be settled-to-market and not collateralized-to-market. Derivatives which are settled-to-market are settled on a daily basis, resulting in derecognition, rather than offsetting, of the related amounts. As a result, settled-to-market amounts are no longer considered to be subject to enforceable netting arrangements. In the absence of this change, an amount of $355 million as at October 31, 2019 (2018: $531 million) relating to derivatives cleared through CME would otherwise have been considered to be offset on the consolidated balance sheet.
(2) Comprises amounts subject to set-off under enforceable netting agreements, such as ISDA agreements, derivative exchange or clearing counterparty agreements, global master repurchase agreements, and global master securities lending agreements. Under such arrangements, all outstanding transactions governed by the relevant agreement can be offset if an event of default or other predetermined event occurs.
(3) Collateral received and pledged amounts are reflected at fair value, but have been limited to the net balance sheet exposure so as not to include any over-collateralization.
(4) Includes contractual rights of set-off that are subject to uncertainty under the laws of the relevant jurisdiction, exchange-traded derivatives and derivatives which are settled-to-market.

The offsetting and collateral arrangements discussed above and other credit risk mitigation strategies used by CIBC are further explained in the "Credit risk" section of the MD&A. Certain amounts of securities received as collateral are restricted from being sold or re-pledged.

Note 29 | Interest income and expense

The table below provides the consolidated interest income and expense by accounting categories.

$ millions, for the year ended October 31		Interest income	Interest expense
2019	**IFRS 9**		
	Measured at amortized cost [1]	**$ 17,871**	**$ 9,824**
	Debt securities measured at FVOCI [1]	**960**	**n/a**
	Other [2]	**1,866**	**322**
	Total	**$ 20,697**	**$ 10,146**
2018	**IFRS 9**		
	Measured at amortized cost [1]	$ 15,275	$ 7,139
	Debt securities measured at FVOCI [1]	749	n/a
	Other [2]	1,481	301
	Total	$ 17,505	$ 7,440
2017	**IAS 39**		
	Amortized cost and HTM [1]	$ 11,712	$ 4,359
	AFS debt securities [1]	480	n/a
	Other [2]	1,401	257
	Total	$ 13,593	$ 4,616

(1) Interest income for financial instruments that are measured at amortized cost and debt securities that are measured at FVOCI is calculated using the effective interest rate method.
(2) Includes interest income and expense and dividend income for financial instruments that are mandatorily measured and designated at FVTPL and equity securities designated at FVOCI.
n/a Not applicable.

Note 30 | Segmented and geographic information

CIBC has four strategic business units (SBUs) – Canadian Personal and Small Business Banking, Canadian Commercial Banking and Wealth Management, U.S. Commercial Banking and Wealth Management, and Capital Markets. These SBUs are supported by Corporate and Other.

Canadian Personal and Small Business Banking provides personal and business clients across Canada with financial advice, products and services through a team in our banking centres, as well as through our direct, mobile and remote channels.

Canadian Commercial Banking and Wealth Management provides high-touch, relationship-oriented banking and wealth management services to middle-market companies, entrepreneurs, high-net-worth individuals and families across Canada, as well as asset management services to institutional investors.

U.S. Commercial Banking and Wealth Management provides high-touch, relationship-oriented commercial, personal and small business banking, as well as wealth management services to meet the needs of middle-market companies, executives, entrepreneurs, high-net-worth individuals and families in the markets we serve in the U.S.

Capital Markets provides integrated global markets products and services, investment banking advisory and execution, corporate banking solutions and top-ranked research to corporate, government and institutional clients around the world.

Corporate and Other includes the following functional groups – Technology and Operations, Risk Management, Culture and Brand, and Finance, as well as other support groups. The expenses of these functional and support groups are generally allocated to the business lines within the SBUs. The majority of the functional and support costs of CIBC Bank USA are recognized directly in the U.S. Commercial Banking and Wealth Management SBU. Corporate and Other also includes the results of CIBC FirstCaribbean and other strategic investments, as well as other income statement and balance sheet items not directly attributable to the business lines.

Business unit allocations

Revenue, expenses, and other balance sheet resources related to certain activities are generally allocated to the lines of business within the SBUs.

Treasury activities impact the financial results of the SBUs. Each line of business within our SBUs is charged or credited with a market-based cost of funds on assets and liabilities, respectively, which impacts the revenue performance of the SBUs. Once the interest and liquidity risks inherent in our client-driven assets and liabilities are transfer priced into Treasury, they are managed within CIBC's risk framework and limits. The residual financial results associated with Treasury activities are reported in Corporate and Other, with the exception of certain Treasury activities in U.S. Commercial Banking and Wealth Management, which are reported in that SBU. Capital is attributed to the SBUs in a manner that is intended to consistently measure and align economic costs with the underlying benefits and risks associated with SBU activities. Earnings on unattributed capital remain in Corporate and Other. We review our transfer pricing methodologies on an ongoing basis to ensure they reflect changing market environments and industry practices.

To measure and report the results of operations of the lines of business within our Canadian Personal and Small Business Banking and Canadian Commercial Banking and Wealth Management SBUs, we use a Manufacturer/Customer Segment/Distributor Management Model. The model uses certain estimates and allocation methodologies to process internal payments between lines of business for sales, renewals and trailer commissions to facilitate preparation of segmented financial information. Periodically, the sales, renewals and trailer commission rates paid to customer segments for certain products/services are revised and applied prospectively.

Non-interest expenses incurred by our functional groups are attributed to the SBUs to which they relate based on appropriate criteria.

Effective November 1, 2017, provision for credit losses on both impaired (stage 3) and performing (stages 1 and 2) loans are recognized in the respective SBUs. See "Changes made to our business segments in previous years" below for details on how provision for credit losses was attributed prior to our adoption of IFRS 9 on November 1, 2017.

Changes made to our business segments in previous years

2018

We adopted IFRS 9 effective November 1, 2017. As permitted, prior period amounts were not restated. See Note 1 for additional details. Our adoption of IFRS 9 impacted how provision for credit losses is attributed to our SBUs. Prior to November 1, 2017, provision for credit losses on performing loans was recognized in Corporate and Other, with the exception of provision for credit losses related to CIBC Bank USA, which was recognized in U.S. Commercial Banking and Wealth Management, and provision for credit losses on: (i) performing residential mortgages greater than 90 days delinquent; and (ii) performing personal loans and scored small business loans greater than 30 days delinquent, which was recognized in Canadian Personal and Small Business Banking. Following our adoption of IFRS 9 on November 1, 2017, we recognize provision for credit losses on both impaired (stage 3) and performing (stages 1 and 2) loans in the respective SBUs.

2017

In 2017, we announced changes to CIBC's leadership team and organizational structure to further accelerate our transformation. We also completed our acquisition of PrivateBancorp and its subsidiary, The PrivateBank, subsequently rebranded as CIBC Bank USA. These changes resulted in the creation of our four current SBUs: Canadian Personal and Small Business Banking, Canadian Commercial Banking and Wealth Management, U.S. Commercial Banking and Wealth Management, and Capital Markets. Prior to the announcement, CIBC had three SBUs: Retail and Business Banking, Wealth Management, and Capital Markets.

In 2017, we also enhanced the transfer pricing methodology used by Treasury to charge and credit the SBUs for the cost and benefit of funding assets and liabilities, respectively, to better align to our liquidity risk models.

Prior period amounts were reclassified accordingly as a result of these changes, with no impact on prior period consolidated net income.

Results by reporting segments and geographic areas

$ millions, for the year ended October 31	Canadian Personal and Small Business Banking	Canadian Commercial Banking and Wealth Management	U.S. Commercial Banking and Wealth Management	Capital Markets	Corporate and Other	CIBC Total	Canada [1]	U.S. [1]	Caribbean [1]	Other countries [1]
2019 Net interest income [2]	**$ 6,382**	**$ 1,224**	**$ 1,383**	**$ 1,228**	**$ 334**	**$ 10,551**	**$ 7,890**	**$ 1,405**	**$ 820**	**$ 436**
Non-interest income [3][4]	**2,376**	**2,822**	**583**	**1,709**	**570**	**8,060**	**6,008**	**1,099**	**643**	**310**
Total revenue	**8,758**	**4,046**	**1,966**	**2,937**	**904**	**18,611**	**13,898**	**2,504**	**1,463**	**746**
Provision for (reversal of) credit losses	**896**	**163**	**73**	**153**	**1**	**1,286**	**1,111**	**173**	**1**	**1**
Amortization and impairment [5]	**96**	**8**	**109**	**4**	**621**	**838**	**508**	**139**	**181**	**10**
Other non-interest expenses	**4,649**	**2,098**	**1,010**	**1,512**	**749**	**10,018**	**7,985**	**1,290**	**556**	**187**
Income (loss) before income taxes	**3,117**	**1,777**	**774**	**1,268**	**(467)**	**6,469**	**4,294**	**902**	**725**	**548**
Income taxes [2]	**826**	**476**	**91**	**331**	**(376)**	**1,348**	**1,008**	**139**	**155**	**46**
Net income (loss)	**$ 2,291**	**$ 1,301**	**$ 683**	**$ 937**	**$ (91)**	**$ 5,121**	**$ 3,286**	**$ 763**	**$ 570**	**$ 502**
Net income (loss) attributable to:										
Non-controlling interests	**$ –**	**$ –**	**$ –**	**$ –**	**$ 25**	**$ 25**	**$ –**	**$ –**	**$ 25**	**$ –**
Equity shareholders	**2,291**	**1,301**	**683**	**937**	**(116)**	**5,096**	**3,286**	**763**	**545**	**502**
Average assets [6]	**$ 259,089**	**$ 62,552**	**$ 48,687**	**$ 184,566**	**$ 84,822**	**$ 639,716**	**$ 501,066**	**$ 99,152**	**$ 27,086**	**$ 12,412**
2018 Net interest income [2]	$ 6,167	$ 1,120	$ 1,236	$ 1,413	$ 129	$ 10,065	$ 7,963	$ 1,204	$ 793	$ 105
Non-interest income [3][4]	2,438	2,745	530	1,499	557	7,769	6,030	895	567	277
Total revenue	8,605	3,865	1,766	2,912	686	17,834	13,993	2,099	1,360	382
Provision for (reversal of) credit losses	741	5	79	(30)	75	870	740	57	75	(2)
Amortization and impairment [5]	98	9	107	4	439	657	469	136	44	8
Other non-interest expenses	4,297	2,059	916	1,488	841	9,601	7,655	1,231	530	185
Income (loss) before income taxes	3,469	1,792	664	1,450	(669)	6,706	5,129	675	711	191
Income taxes [2]	922	485	99	381	(465)	1,422	1,021	288	72	41
Net income (loss)	$ 2,547	$ 1,307	$ 565	$ 1,069	$ (204)	$ 5,284	$ 4,108	$ 387	$ 639	$ 150
Net income (loss) attributable to:										
Non-controlling interests	$ –	$ –	$ –	$ –	$ 17	$ 17	$ –	$ –	$ 17	$ –
Equity shareholders	2,547	1,307	565	1,069	(221)	5,267	4,108	387	622	150
Average assets [6]	$ 259,130	$ 55,713	$ 42,028	$ 166,231	$ 75,339	$ 598,441	$ 476,224	$ 80,935	$ 31,101	$ 10,181
2017 Net interest income [2]	$ 5,752	$ 984	$ 545	$ 1,647	$ 49	$ 8,977	$ 7,829	$ 449	$ 639	$ 60
Non-interest income [3][4]	2,620	2,606	331	1,176	570	7,303	5,720	675	646	262
Total revenue	8,372	3,590	876	2,823	619	16,280	13,549	1,124	1,285	322
Provision for (reversal of) credit losses	766	16	84	(4)	(33)	829	730	68	31	–
Amortization and impairment [5]	87	9	33	5	408	542	431	64	39	8
Other non-interest expenses	4,261	2,012	501	1,368	887	9,029	7,534	805	518	172
Income (loss) before income taxes	3,258	1,553	258	1,454	(643)	5,880	4,854	187	697	142
Income taxes [2]	838	415	55	364	(510)	1,162	928	88	110	36
Net income (loss)	$ 2,420	$ 1,138	$ 203	$ 1,090	$ (133)	$ 4,718	$ 3,926	$ 99	$ 587	$ 106
Net income (loss) attributable to:										
Non-controlling interests	$ –	$ –	$ –	$ –	$ 19	$ 19	$ –	$ –	$ 19	$ –
Equity shareholders	2,420	1,138	203	1,090	(152)	4,699	3,926	99	568	106
Average assets [6]	$ 246,316	$ 50,832	$ 19,905	$ 156,440	$ 68,872	$ 542,365	$ 451,831	$ 52,023	$ 28,553	$ 9,958

(1) Net income and average assets are allocated based on the geographic location where they are recorded.
(2) U.S. Commercial Banking and Wealth Management and Capital Markets net interest income and income taxes include taxable equivalent basis (TEB) adjustments of $2 million and $177 million, respectively (2018: $2 million and $278 million, respectively; 2017: $2 million and $298 million, respectively) with an equivalent offset in Corporate and Other.
(3) The fee and commission income within non-interest income consists primarily of underwriting and advisory fees, deposit and payment fees, credit fees, card fees, investment management and custodial fees, mutual fund fees and commissions on securities transactions. Underwriting and advisory fees are earned primarily in Capital Markets with the remainder earned in Canadian Commercial Banking and Wealth Management. Deposit and payment fees are earned primarily in Canadian Personal and Small Business Banking, with the remainder earned mainly in Canadian Commercial Banking and Wealth Management and Corporate and Other. Credit fees are earned primarily in Canadian Commercial Banking and Wealth Management, Capital Markets, and U.S. Commercial Banking and Wealth Management. Card fees are earned primarily in Canadian Personal and Small Business Banking, with the remainder earned mainly in Corporate and Other. Investment management and custodial fees are earned primarily in Canadian Commercial Banking and Wealth Management and U.S. Commercial Banking and Wealth Management, with the remainder earned mainly in Corporate and Other. Mutual fund fees are earned primarily in Canadian Commercial Banking and Wealth Management and U.S. Commercial Banking and Wealth Management. Commissions on securities transactions are earned primarily in Capital Markets and Canadian Commercial Banking and Wealth Management.
(4) Includes intersegment revenue, which represents internal sales commissions and revenue allocations under the Manufacturer / Customer Segment / Distributor Management Model. Prior period amounts have been restated to conform to the presentation.
(5) Comprises amortization and impairment of buildings, furniture, equipment, leasehold improvements, and software and other intangible assets.
(6) Assets are disclosed on an average basis as this measure is most relevant to a financial institution and is the measure reviewed by management.

The following table provides a breakdown of revenue from our reporting segments:

$ millions, for the year ended October 31	**2019**	2018	2017
Canadian Personal and Small Business Banking	**$ 8,758**	$ 8,605	$ 8,372
Canadian Commercial Banking and Wealth Management			
Commercial banking	**$ 1,651**	$ 1,488	$ 1,324
Wealth management	**2,395**	2,377	2,266
	$ 4,046	$ 3,865	$ 3,590
U.S. Commercial Banking and Wealth Management [1]			
Commercial banking	**$ 1,349**	$ 1,197	$ 532
Wealth management	**611**	563	324
Other	**6**	6	20
	$ 1,966	$ 1,766	$ 876
Capital Markets [1]			
Global markets	**$ 1,705**	$ 1,674	$ 1,601
Corporate and investment banking [2]	**1,232**	1,238	1,222
	$ 2,937	$ 2,912	$ 2,823
Corporate and Other [1]			
International banking	**$ 803**	$ 663	$ 723
Other	**101**	23	(104)
	$ 904	$ 686	$ 619

(1) U.S. Commercial Banking and Wealth Management and Capital Markets revenue includes a TEB adjustment of $2 million and $177 million, respectively (2018: $2 million and $278 million, respectively; 2017: $2 million and $298 million, respectively) with an equivalent offset in Corporate and Other.
(2) Certain information has been reclassified to conform to the presentation adopted in 2019. Corporate and investment banking now includes the Other line of business.

Note 31 | Future accounting policy changes

IFRS 16 "Leases" (IFRS 16)

IFRS 16, issued in January 2016, replaces IAS 17 "Leases", and is effective for annual periods beginning on or after January 1, 2019, which for us will be on November 1, 2019. As a lessee, the new standard will result in on-balance sheet recognition for most leases that are considered operating leases under IAS 17, which will result in a gross-up of the consolidated balance sheet through the recognition of a liability for the present value of future lease payments (i.e. lease liability) and an asset representing the right to use the underlying asset (i.e. right-of-use asset). We will no longer recognize the impacted lease payments through operating expenses; instead, we will recognize depreciation expense on the right-of-use asset and interest expense on the lease liability in the consolidated statement of income. Accounting for leases by lessors remains mostly unchanged from IAS 17. However, on transition, intermediate lessors are required to reassess subleases by reference to the right-of-use asset arising from the head lease that could result in on-balance sheet recognition for certain subleases previously classified as operating subleases. The application of IFRS 16 mainly will apply to our office and banking centre leases, as well as certain subleases previously classified as operating subleases.

We expect to adopt IFRS 16 for the fiscal year beginning November 1, 2019 using the modified retrospective method, with no restatement of comparative periods.

As at November 1, 2019, the adoption of IFRS 16 is expected to result in the recognition of approximately $1.6 billion of right-of-use assets and corresponding lease liabilities on our consolidated balance sheet. In addition, the reassessment of certain subleases related to a previously recognized finance lease property, a portion of which is leased and considered investment property, is expected to result in an increase in net assets of approximately $0.1 billion from the recognition of additional sublease-related assets, net of the derecognition of amounts related to the corresponding head lease. As at November 1, 2019, the after-tax impact to retained earnings as a result of adopting IFRS 16 is expected to be an increase of $0.1 billion.

In addition, the following permitted recognition exemptions and practical expedients have been applied:

- A single discount rate curve has been applied to portfolios of leases with reasonably similar characteristics at the date of application.
- In contracts where we are the lessee, we have not reassessed contracts that were identified as finance leases under the previous accounting standard (IAS 17).
- We have elected to exclude leases of assets considered as low value and certain short-term leases.
- We have applied the onerous leases provisions recognized as at October 31, 2019 as an alternative to performing an impairment review of our right-of-use assets as at November 1, 2019. Where an onerous lease provision was recorded on a lease, the right-of-use asset has been reduced by the amount of that provision on transition and no further impairment review was performed.
- We have elected not to separate lease and non-lease components of a lease contract when calculating the lease liability and corresponding right-of-use asset for certain classes of assets. Non-lease components may consist of, but are not limited to, common area maintenance expenses and utility charges. Other occupancy costs not within the scope of IFRS 16 will continue to be recorded as operating expenses.

The actual impacts of the initial application of IFRS 16 may vary from our estimates based on final application and testing of the internal controls over financial reporting related to IFRS 16, as well as revisions to the accounting policies and judgments, including application of practical expedients. We have updated our accounting systems and internal control processes in response to the standard, and are in the final stages of testing and acceptance for our transition to IFRS 16.

IFRIC 23 "Uncertainty over Income Tax Treatments" (IFRIC 23)

In June 2017, the IASB issued IFRIC 23, which clarifies the accounting for uncertainties in income taxes. IFRIC 23 is effective for annual reporting periods beginning on or after January 1, 2019, which for us is on November 1, 2019.

There will be no impact to our consolidated financial statements as a result of adopting IFRIC 23.

Interest Rate Benchmark Reform: Amendments to IFRS 9, IAS 39 and IFRS 7

In September 2019, the IASB issued "Interest Rate Benchmark Reform: Amendments to IFRS 9, IAS 39 and IFRS 7", which provides relief for specific hedge accounting requirements to address uncertainties in the period before the interest rate benchmark reform, and provides specific disclosure requirements for the affected hedging relationships. The amendments are effective for annual periods beginning on or after January 1, 2020. As permitted under IFRS 9, we have elected to continue to apply the hedge accounting requirements of IAS 39. Therefore, the amendments will apply to IAS 39 and IFRS 7 for us, mandatorily effective on November 1, 2020. Earlier application is permitted.

We continue to evaluate the impact of the amendments to IAS 39 and IFRS 7 on our consolidated financial statements.

Conceptual Framework for Financial Reporting

In March 2018, the IASB issued a revised version of its "Conceptual Framework for Financial Reporting" (Conceptual Framework). The Conceptual Framework sets out the fundamental concepts that underlie the preparation and presentation of financial statements and serves to guide the IASB in developing IFRS standards. The Conceptual Framework also assists entities in developing accounting policies when no IFRS standard applies to a particular transaction, and more broadly, the Conceptual Framework helps entities to understand and interpret the standards. The Conceptual Framework is effective for annual periods beginning on or after January 1, 2020, which for us will be on November 1, 2020. Early application is permitted.

We are currently assessing the impact of the Conceptual Framework on our consolidated financial statements.

IFRS 17 "Insurance Contracts" (IFRS 17)

IFRS 17, issued in May 2017, replaces IFRS 4 "Insurance Contracts", and was originally effective for annual periods beginning on or after January 1, 2021, which for us is on November 1, 2021. In June 2019, the IASB released an exposure draft proposing amendments to IFRS 17, including the expected proposal to defer the effective date from reporting periods beginning on or after January 1, 2021 to January 1, 2022. The IASB plans to finalize the amendments to IFRS 17 in 2020, subsequent to the comment period ended September 2019. IFRS 17 provides comprehensive guidance on the recognition, measurement, presentation and disclosure of insurance contracts.

We continue to evaluate the impact of IFRS 17 on our consolidated financial statements.