

## Note 1: Basis of Presentation

Bank of Montreal (“the bank”) is a chartered bank under the *Bank Act (Canada)* and is a public company incorporated in Canada. We are a highly diversified financial services company, providing a broad range of personal and commercial banking, wealth management and investment banking products and services. The bank’s head office is at 129 rue Saint-Jacques, Montreal, Quebec. Its executive offices are at 100 King Street West, 1 First Canadian Place, Toronto, Ontario. Our common shares are listed on the Toronto Stock Exchange (“TSX”) and the New York Stock Exchange.

We have prepared these consolidated financial statements in accordance with International Financial Reporting Standards (“IFRS”) as issued by the International Accounting Standards Board (“IASB”). We also comply with interpretations of IFRS by our regulator, the Office of the Superintendent of Financial Institutions Canada (“OSFI”).

Our consolidated financial statements have been prepared on a historic cost basis, except for the revaluation of the following items: assets and liabilities held for trading; financial assets and liabilities measured or designated at fair value through profit or loss (“FVTPL”); financial assets measured or designated at fair value through other comprehensive income (“FVOCI”); financial assets and financial liabilities designated as hedged items in qualifying fair value hedge relationships; cash-settled share-based payment liabilities; defined benefit pension and other employee future benefit liabilities; and insurance-related liabilities.

These consolidated financial statements were authorized for issue by the Board of Directors on December 4, 2018.

### Basis of Consolidation

These consolidated financial statements are inclusive of the financial statements of our subsidiaries as at October 31, 2018. We conduct business through a variety of corporate structures, including subsidiaries, structured entities (“SEs”), associates and joint ventures. Subsidiaries are those entities where we exercise control through our ownership of the majority of the voting shares. We also hold interests in SEs, which we consolidate when we control the SEs. These are more fully described in Note 7. All of the assets, liabilities, revenues and expenses of our subsidiaries and consolidated SEs are included in our consolidated financial statements. All intercompany transactions and balances are eliminated on consolidation.

We hold investments in associates, where we exert significant influence over operating, investing and financing decisions (generally companies in which we own between 20% and 50% of the voting shares). These are accounted for using the equity method. The equity method is also applied to our investments in joint ventures. Joint ventures are those entities where we exercise joint control through an agreement with other shareholders. Under the equity method of accounting, investments are initially recorded at cost, and the carrying amount is increased or decreased to recognize our share of investee net income or loss, including other comprehensive income or loss. Our equity accounted investments are recorded as other securities and our share of the net income or loss is recorded in investments in associates and joint ventures, in our Consolidated Statement of Income. Any other comprehensive income amounts are reflected in the relevant section of our Consolidated Statement of Comprehensive Income. Additional information regarding accounting for other securities is included in Note 3.

Non-controlling interest in subsidiaries is presented in our Consolidated Balance Sheet as a separate component of equity that is distinct from our shareholders’ equity. The net income attributable to non-controlling interest in subsidiaries is presented separately in our Consolidated Statement of Income.

### Specific Accounting Policies

To facilitate a better understanding of our consolidated financial statements, we have disclosed our significant accounting policies throughout the following notes with the related financial disclosures by major caption:

Note	Topic	Page	Note	Topic	Page
1	Basis of Presentation	148	16	Equity	182
2	Cash and Interest Bearing Deposits with Banks	153	17	Fair Value of Financial Instruments and Trading-Related Revenue	184
3	Securities	153	18	Offsetting of Financial Assets and Financial Liabilities	190
4	Loans and Allowance for Credit Losses	157	19	Capital Management	191
5	Risk Management	164	20	Employee Compensation – Share-Based Compensation	192
6	Transfer of Assets	164	21	Employee Compensation – Pension and Other Employee Future Benefits	194
7	Structured Entities	165	22	Income Taxes	198
8	Derivative Instruments	167	23	Earnings Per Share	200
9	Premises and Equipment	175	24	Commitments, Guarantees, Pledged Assets, Provisions and Contingent Liabilities	201
10	Acquisitions	176	25	Operating and Geographic Segmentation	203
11	Goodwill and Intangible Assets	176	26	Significant Subsidiaries	206
12	Other Assets	178	27	Related Party Transactions	206
13	Deposits	178	28	Transition to IFRS 9	207
14	Other Liabilities	179			
15	Subordinated Debt	181			

### Translation of Foreign Currencies

We conduct business in a variety of foreign currencies and present our consolidated financial statements in Canadian dollars, which is our functional currency. Monetary assets and liabilities, as well as non-monetary assets and liabilities measured at fair value that are denominated in foreign currencies, are translated into Canadian dollars at the exchange rate in effect at the balance sheet date. Non-monetary assets and liabilities not measured at fair value are translated into Canadian dollars at historical rates. Revenues and expenses denominated in foreign currencies are translated using the average exchange rate for the year.

Unrealized gains and losses arising from translating our net investment in foreign operations into Canadian dollars, net of related hedging activities and applicable income taxes, are included in our Consolidated Statement of Comprehensive Income within net gain (loss) on translation of net foreign operations. When we dispose of a foreign operation such that control, significant influence or joint control is lost, the cumulative amount of the translation gain (loss) and any applicable hedging activities and related income taxes is reclassified to our Consolidated Statement of Income as part of the gain or loss on disposition.

Foreign currency translation gains and losses on equity securities measured at FVOCI that are denominated in foreign currencies are included in accumulated other comprehensive income on FVOCI equity securities, net of taxes, in our Consolidated Statement of Changes in Equity. All other foreign currency translation gains and losses are included in foreign exchange, other than trading, in our Consolidated Statement of Income as they arise.

From time to time, we enter into foreign exchange hedge contracts to reduce our exposure to changes in the value of foreign currencies. Realized and unrealized gains and losses that arise on the mark-to-market of foreign exchange contracts related to economic hedges are included in non-interest revenue in our Consolidated Statement of Income. Changes in the fair value of derivative contracts that qualify as accounting hedges are recorded in our Consolidated Statement of Comprehensive Income within net change in unrealized gains (losses) on derivatives designated as cash flow hedges, with the spot/forward differential (the difference between the foreign currency exchange rate at the inception of the contract and the rate at the end of the contract) recorded in interest income (expense) over the term of the hedge.

## Revenue

### *Dividend Income*

Dividend income is recognized when the right to receive payment is established. This is the ex-dividend date for listed equity securities.

### *Fee Income*

**Securities commissions and fees** are earned in Wealth Management and Capital Markets on brokerage transactions executed for customers, generally as a fixed fee per share traded, where the commissions and related clearing expense are recognized on trade date. There are also fees based on a percentage of the customer's portfolio holdings that entitle clients to investment advice and a certain number of trades which are recorded over the period to which they relate.

**Deposit and payment service charges** are primarily earned in Personal and Commercial Banking and include monthly account maintenance fees and other activity-based fees earned on deposit and cash management services. Fees are recognized over time or at a point in time, i.e. over the period that account maintenance and cash management services are provided, or when an income-generating activity is performed.

**Card fees** arise in Personal and Commercial Banking and primarily include interchange income, late fees and annual fees. Card fees are recorded when the related services are provided, except for annual fees, which are recorded evenly throughout the year. Interchange income is calculated as a percentage of the transaction amount and/or a fixed price per transaction as established by the payment network and is recognized when the card transaction is settled. Reward costs for certain of our cards are recorded as a reduction in card fees.

**Investment management and custodial fees** are earned in Wealth Management and are based primarily on the balance of assets under management or assets under administration, as at the period end, for investment management, custodial, estate and trustee services provided. Fees are recorded over the period the services are performed.

**Mutual fund revenues** arise in Wealth Management and are earned on fund management services which are primarily calculated and recorded based on a percentage of the fund's net asset value. The fees are recorded over the period the services are performed.

**Underwriting and advisory fees** are earned in Capital Markets and arise from securities offerings in which we act as an underwriter or agent, structuring and administering loan syndications and fees earned from providing merger-and-acquisition services and structuring advice. Underwriting and advisory fees are generally recognized when the services or milestones are completed.

## Leases

We are lessors in both financing leases and operating leases. Leases are classified as financing leases if they transfer substantially all the risks and rewards incidental to ownership of the leased asset to the lessee. Otherwise they are classified as operating leases, as we retain substantially all the risks and rewards of asset ownership.

As lessor in a financing lease, a loan is recognized equal to the investment in the lease, which is calculated as the present value of the minimum payments to be received from the lessee, discounted at the interest rate implicit in the lease, plus any unguaranteed residual value we expect to recover at the end of the lease. Finance lease income is recognized in interest, dividend and fee income, loans, in our Consolidated Statement of Income.

Assets under operating leases are recorded in other assets in our Consolidated Balance Sheet. Rental income is recognized on a straight-line basis over the term of the lease in non-interest revenue, other, in our Consolidated Statement of Income. Depreciation on these assets is recognized on a straight-line basis over the life of the lease in non-interest expense, other, in our Consolidated Statement of Income.

## Assets Held-for-Sale

Non-current non-financial assets classified as held-for-sale are measured at the lower of their carrying amount and fair value less costs to sell and are presented within other assets in our Consolidated Balance Sheet. Subsequent to its initial classification, a non-current asset is no longer depreciated or amortized, and any subsequent write-down in fair value less costs to sell is recognized in non-interest revenue, other, in our Consolidated Statement of Income.

## Changes in Accounting Policies

### *Financial Instruments*

Effective November 1, 2017 we adopted IFRS 9 *Financial Instruments* ("IFRS 9"), which replaces IAS 39 *Financial Instruments: Recognition and Measurement* ("IAS 39"). IFRS 9 addresses impairment, classification and measurement, and hedge accounting. The impact to shareholders' equity at November 1, 2017 was an increase of \$70 million (\$44 million after-tax) related to the impairment requirements of the standard. Prior periods have not been restated. Refer to Note 28, Transition to IFRS 9, for the impact on the opening balance sheet at November 1, 2017 and for accounting policies under IAS 39, which were applicable in prior periods.

### Impairment

IFRS 9 introduces a new expected credit loss (“ECL”) impairment model for all financial assets and certain off-balance sheet loan commitments and guarantees. The new ECL model results in an allowance for credit losses being recorded on financial assets regardless of whether there has been an actual impairment. This differs from our previous approach where the allowance recorded on performing loans was designed to capture only incurred losses whether or not they have been specifically identified.

The ECL model requires the recognition of credit losses based on up to 12 months of expected losses for performing loans (Stage 1) and the recognition of lifetime expected losses on performing loans that have experienced a significant increase in credit risk since origination (Stage 2).

The determination of a significant increase in credit risk takes into account many different factors and will vary by product and risk segment. The main factors considered in making this determination are relative changes in probability-weighted probability of default since origination and certain other criteria such as 30-day past due and watchlist status. The allowance for assets in Stage 2 will be higher than for those in Stage 1 as a result of the longer time horizon associated with this stage. Stage 3 requires the recognition of lifetime losses for all credit impaired assets.

IFRS 9 requires consideration of past events, current market conditions and reasonable supportable information about future economic conditions, in determining whether there has been a significant increase in credit risk and in calculating the amount of expected losses. The standard also requires future economic conditions be based on an unbiased, probability-weighted assessment of possible future outcomes.

In considering the lifetime of an instrument, IFRS 9 generally requires the use of the contractual period, including pre-payment, extension and other options. For revolving instruments, such as credit cards, that may not have a defined contractual period, lifetime is based on historical behaviour.

### Classification and Measurement

Debt instruments, including loans, are classified based on both our business model for managing the assets and the contractual cash flow characteristics of the assets. Debt instruments are measured at fair value through profit or loss (“FVTPL”) unless certain conditions are met that permit measurement at either fair value through other comprehensive income (“FVOCI”) or amortized cost.

FVOCI is permitted where debt instruments are held with the objective of selling the assets or collecting contractual cash flows and those cash flows represent solely payments of principal and interest. These securities may be sold in response to or in anticipation of changes in interest rates and resulting prepayment risk, changes in credit risk, changes in foreign currency risk, changes in funding sources or terms, or to meet liquidity needs. Changes in fair value are recorded in other comprehensive income; gains or losses on disposal and impairment losses are recorded in our Consolidated Statement of Income.

Amortized cost is permitted where debt instruments are held with the objective of collecting contractual cash flows and those cash flows represent solely payments of principal and interest. Gains or losses on disposal and impairment losses are recorded in our Consolidated Statement of Income.

For both FVOCI and amortized cost instruments, premiums, discounts and transaction costs are amortized over the term of the instrument on an effective yield basis as an adjustment to interest income.

Equity instruments are measured at FVTPL unless we elect to measure at FVOCI, in which case gains and losses are never recognized in income.

As permitted by IFRS 9, in fiscal 2015, we have early adopted the provisions relating to the recognition of changes in own credit risk for financial liabilities designated at FVTPL.

Additional information regarding changes in own credit risk is included in Notes 13 and 14.

### Hedge Accounting

IFRS 9 introduced a new hedge accounting model that expands the scope of hedged items and risks eligible for hedge accounting and aligns hedge accounting more closely with risk management. The new model no longer specifies quantitative measures for effectiveness testing and does not permit hedge de-designation. IFRS 9 includes a policy choice that allows us to continue to apply the existing hedge accounting rules, which we have elected to use. However, as required by the standard, we adopted the new hedge accounting disclosures. Refer to Note 8.

### Use of Estimates and Judgments

The preparation of the consolidated financial statements requires management to use estimates and assumptions that affect the carrying amounts of certain assets and liabilities, certain amounts reported in net income and other related disclosures.

The most significant assets and liabilities for which we must make estimates include allowance for credit losses; financial instruments measured at fair value; pension and other employee future benefits; impairment of securities; income taxes and deferred taxes; goodwill and intangible assets; insurance-related liabilities; and provisions. We make judgments in assessing whether substantially all risks and rewards have been transferred in respect of transfers of financial assets and whether we control SEs, as discussed in Notes 6 and 7, respectively. If actual results were to differ from the estimates, the impact would be recorded in future periods.

We have established detailed policies and control procedures that are intended to ensure these judgments are well controlled, independently reviewed and consistently applied from period to period. We believe that our estimates of the value of our assets and liabilities are appropriate.

### Allowance for Credit Losses

The expected credit loss model requires the recognition of credit losses based on up to 12 months of expected losses for performing loans and the recognition of lifetime losses on performing loans that have experienced a significant increase in credit risk since origination.

The determination of a significant increase in credit risk takes into account many different factors and varies by product and risk segment. The main factors considered in making this determination are relative changes in probability of default since origination, and certain other criteria, such as 30-day past due and watchlist status. The assessment of a significant increase in credit risk requires experienced credit judgment.

In determining whether there has been a significant increase in credit risk and in calculating the amount of expected credit losses, we must rely on estimates and exercise judgment regarding matters for which the ultimate outcome is unknown. These judgments include changes in circumstances that may cause future assessments of credit risk to be materially different from current assessments, which could require an increase or decrease in the allowance for credit losses.

The calculation of expected credit losses includes the explicit incorporation of forecasts of future economic conditions. We have developed models incorporating specific macroeconomic variables that are relevant to each portfolio. Key economic variables for our retail portfolios include primary operating markets of Canada, the United States and regional markets where considered significant. Forecasts are developed internally by our

Economics group, considering external data and our view of future economic conditions. We exercise experienced credit judgment to incorporate multiple economic forecasts which are probability-weighted in the determination of the final expected credit loss. The allowance is sensitive to changes in both economic forecasts and the probability weight assigned to each forecast scenario.

Additional information regarding the allowance for credit losses is included in Notes 4 and 28.

#### *Financial Instruments Measured at Fair Value*

Fair value measurement techniques are used to value various financial assets and financial liabilities and are used in performing impairment testing on certain non-financial assets. Detailed discussions of our fair value measurement techniques are included in Note 17.

#### *Pension and Other Employee Future Benefits*

Our pension and other employee future benefits expense is calculated by our independent actuaries using assumptions determined by management. If actual experience were to differ from the assumptions used, we would recognize this difference in other comprehensive income.

Pension and other employee future benefits expense, plan assets and defined benefit obligations are also sensitive to changes in discount rates. We determine discount rates for all of our plans using high-quality AA rated corporate bond yields with terms matching the plans' specific cash flows.

Additional information regarding our accounting for pension and other employee future benefits is included in Note 21.

#### *Impairment of Securities*

We review other securities at each quarter-end reporting period to identify and evaluate investments that show indications of possible impairment. For these equity securities, a significant or prolonged decline in the fair value of a security below its cost is objective evidence of impairment.

Debt securities measured at amortized cost or FVOCI are assessed for impairment using the expected credit loss model. For securities determined to have low credit risk, the allowance for credit losses is measured at a 12 month expected credit loss.

Additional information regarding our accounting for debt securities measured at amortized cost or FVOCI and other securities, allowance for credit losses and the determination of fair value is included in Notes 3 and 17.

#### *Income Taxes and Deferred Tax Assets*

The provision for income taxes is calculated based on the expected tax treatment of transactions recorded in either our Consolidated Statement of Income or Consolidated Statement of Changes in Equity. In determining the provision for income taxes, we interpret tax legislation, case law and administrative positions in numerous jurisdictions and, based on our judgment, record our estimate of the amount required to settle tax obligations. We also make assumptions about the expected timing of the reversal of deferred tax assets and liabilities. If our interpretations differ from those of taxing authorities or if the timing of reversals is not as expected, our provision for income taxes could increase or decrease in future periods. The amount of any such increase or decrease cannot be reasonably estimated.

Deferred tax assets are recognized only when it is probable that sufficient taxable profit will be available in future periods against which deductible temporary differences may be utilized. We are required to assess whether it is probable that our deferred income tax assets will be realized prior to expiration and, based on all the available evidence, determine if any portion of our deferred income tax assets should not be recognized. The factors used to assess the probability of realization are our past experience of income and capital gains, our forecast of future net income before taxes, and the period remaining before the expiration of tax loss carryforwards. Changes in our assessment of these factors could increase or decrease our provision for income taxes in future periods.

Additional information regarding our accounting for income taxes is included in Note 22.

#### *Goodwill and Intangible Assets*

For the purpose of impairment testing, goodwill is allocated to our groups of cash-generating units ("CGUs"), which represent the lowest level within the bank at which goodwill is monitored for internal management purposes. Impairment testing is performed at least annually, by comparing the carrying values and the recoverable amounts of the CGUs to which goodwill has been allocated to determine whether the recoverable amount of each group is greater than its carrying value. If the carrying value of the group were to exceed its recoverable amount, an impairment calculation would be performed. The recoverable amount of a CGU is the higher of its fair value less costs to sell and the value in use.

In determining fair value less costs to sell, we employ a discounted cash flow model consistent with those used when we acquire businesses. This model is dependent on assumptions related to revenue growth, discount rates, synergies achieved on acquisition and the availability of comparable acquisition data. Changes in any of these assumptions would affect the determination of fair value for each of the business units in a different manner. Management must exercise judgment and make assumptions in determining fair value less costs to sell, and differences in judgment and assumptions could affect the determination of fair value and any resulting impairment write-down.

Intangible assets with a definite life are amortized to income on either a straight-line or an accelerated basis over a period not exceeding 15 years, depending on the nature of the asset. We test definite-life intangible assets for impairment when circumstances indicate the carrying value may not be recoverable. Indefinite-life intangible assets are tested annually for impairment. If any intangible assets are determined to be impaired, we write them down to their recoverable amount, the higher of value in use and fair value less costs to sell, when this is less than the carrying value.

Additional information regarding goodwill and intangible assets is included in Note 11.

#### *Insurance-Related Liabilities*

Insurance claims and policy benefit liabilities represent current claims and estimates of future insurance policy benefit liabilities. Liabilities for life insurance contracts are determined using the Canadian Asset Liability Method, which incorporates best-estimate assumptions for mortality, morbidity, policy lapses, surrenders, future investment yields, policy dividends, administration costs and margins for adverse deviation. These assumptions are reviewed at least annually and updated to reflect actual experience and market conditions. The most significant impact on the valuation of a liability would result from a change in the assumption for future investment yields.

Additional information regarding insurance-related liabilities is included in Note 14.

### Provisions

The bank and its subsidiaries are involved in various legal actions in the ordinary course of business.

Provisions are recorded at the best estimate of the amounts required to settle any obligations related to these legal actions as at the balance sheet date, taking into account the risks and uncertainties associated with the obligation. Factors considered in making the assessment include: a case-by-case assessment of specific facts and circumstances, our past experience and the opinions of legal experts. Management and external experts are involved in estimating any provisions. The actual costs of resolving these claims may be substantially higher or lower than the amounts of the provisions.

Additional information regarding provisions is included in Note 24.

### Transfer of Financial Assets and Consolidation of Structured Entities

We enter into transactions in which we transfer assets, typically mortgage loans and credit cards, to a structured entity or third party to obtain alternate sources of funding. We assess whether substantially all of the risks and rewards of the loans have been transferred to determine if they qualify for derecognition. Since we continue to be exposed to substantially all of the repayment, interest rate and/or credit risk associated with the securitized loans, they do not qualify for derecognition. We continue to recognize the loans and the related cash proceeds as secured financings in our Consolidated Balance Sheet.

For securitization vehicles sponsored by the bank, the vehicles typically have limited decision-making authority. The structure of these vehicles limits the activities they can undertake, the types of assets they can hold and how activities are funded. We control and consolidate these vehicles when we have the key decision-making powers necessary to obtain the majority of the benefits of their activities.

For certain investments in limited partnerships, we exercise judgment in determining whether we control an entity. Based on an assessment of our interests and rights, we have determined that we do not control certain entities, even though we may have an ownership interest greater than 50%. This may be the case when we are not the general partner in an arrangement and the general partner's rights most significantly affect the returns of the entity. Additionally, we have determined that we control certain entities despite having an ownership interest less than 50%. This may be the case when we are the general partner in an arrangement and the general partner's rights most significantly affect the returns of the entity.

Transferred assets are discussed in greater detail in Note 6 and structured entities are discussed in greater detail in Notes 7 and 20.

## Future Changes in IFRS

### Revenue

In May 2014, the IASB issued IFRS 15 *Revenue from Contracts with Customers* ("IFRS 15"), which replaces the existing standards for revenue recognition. The new standard establishes a framework for the recognition and measurement of revenues generated from contracts with customers, providing a principles-based approach for revenue recognition, and introduces the concept of recognizing revenue for performance obligations as they are satisfied. Revenues outside of the scope of IFRS 15 include interest and dividend income, trading revenues, securities gains/losses, insurance revenues, investments in associates and joint ventures and lease income. The standard also requires additional disclosures about the nature, amount, timing and uncertainty of revenues and cash flows arising from transactions with our customers.

In April 2016, the IASB issued clarifications to IFRS 15, which provided additional clarity on revenue recognition related to identifying performance obligations, application guidance on principal versus agent and licences of intellectual property.

The primary impact of IFRS 15 will be the reclassification of amounts within the Consolidated Statement of Income. Loyalty rewards and cash promotion costs on cards currently recorded in non-interest expense will be presented as a reduction in non-interest revenue. Reimbursement of certain expenses incurred on behalf of customers currently recorded as a reduction in non-interest expense will be recorded in non-interest revenue. In addition, there will be minimal impacts to net income as a result of no longer discounting our loyalty rewards costs and the amortization of costs to obtain card customers, which are currently expensed as incurred.

On transition to IFRS 15 on November 1, 2018, we can either restate prior periods as if we had always applied IFRS 15 or alternatively, we can recognize the cumulative effect of any changes resulting from our adoption of IFRS 15 in opening retained earnings with no comparison for prior years. We have elected to restate prior periods.

The impact of adopting IFRS 15 in 2018 and 2017 would have been a decrease in non-interest revenue of \$132 million and \$153 million, a decrease in non-interest expense of \$136 million and \$138 million, and an increase in net income of \$3 million and a decrease in net income of \$11 million, in our Consolidated Statement of Income, respectively. The impact in our Consolidated Balance Sheet as at October 31, 2018 and 2017 is not significant.

### Share-based Payment

In June 2016, the IASB issued amendments to IFRS 2 *Share-based Payment* ("IFRS 2") in relation to the classification and measurement of share-based payment transactions. The amendments will not have a significant impact on our consolidated financial statements. The amendments are effective for our fiscal year beginning November 1, 2018.

### Leases

In January 2016, the IASB issued IFRS 16 *Leases* ("IFRS 16"), which provides guidance for leases whereby lessees will recognize a liability for the present value of future lease liabilities and record a corresponding asset on the balance sheet for most leases. There are minimal changes to lessor accounting. IFRS 16 is effective for our fiscal year beginning November 1, 2019.

In order to meet the requirements of IFRS 16, we have established an enterprise-wide project and are currently assessing the impact of the standard on our future financial results. The main impact identified to date is the requirement to record real estate leases on balance sheet. Currently, most of our real estate leases are classified as operating leases, whereby we record lease expense over the term of the lease with no asset or liability recorded on the balance sheet other than any related leasehold improvements. Under IFRS 16, we will recognize a right-of-use asset and a lease liability on the balance sheet. There will be no significant impact on our lessor businesses.

When we adopt IFRS 16, we can either recognize the cumulative effect of any changes resulting from our adoption of IFRS 16 in opening retained earnings with no comparison for prior years or alternatively, we can restate prior periods as if we had always applied IFRS 16. We are assessing our transition approach as part of our project.



### Insurance Contracts

In May 2017, the IASB issued IFRS 17 *Insurance Contracts* (“IFRS 17”), which provides a comprehensive approach to accounting for all types of insurance contracts and will replace the existing IFRS 4 *Insurance Contracts*. In November 2018, the IASB tentatively decided to defer the effective date of IFRS 17 by one year, which would change the anticipated effective date for the bank to November 1, 2022. We will continue to closely monitor the ongoing discussions at the IASB. We are currently assessing the impact of the standard on our future financial results.

### Conceptual Framework

In March 2018, the IASB issued the revised Conceptual Framework (“Framework”), which sets out the fundamental concepts for financial reporting to ensure consistency in standard-setting decisions and that similar transactions are treated in a similar way, so as to provide useful information to users of financial statements. The revised Framework, which is effective for our fiscal year beginning November 1, 2020, will inform future standard-setting decisions but does not impact existing IFRS. We do not expect the Framework to have a significant impact on our accounting policies.

## Note 2: Cash and Interest Bearing Deposits with Banks

(Canadian \$ in millions)	2018	2017
Cash and deposits with banks (1)	40,738	30,002
Cheques and other items in transit, net	1,404	2,597
<b>Total cash and cash equivalents</b>	<b>42,142</b>	<b>32,599</b>

(1) Includes deposits with the Bank of Canada, the U.S. Federal Reserve and other central banks.

### Cheques and Other Items in Transit, Net

Cheques and other items in transit are recorded at cost and represent the net position of the uncleared cheques and other items in transit between us and other banks.

### Cash Restrictions

Certain of our foreign operations are required to maintain reserves or minimum balances with central banks in their respective countries of operation, totalling \$1,655 million as at October 31, 2018 (\$1,435 million in 2017).

### Interest Bearing Deposits with Banks

Deposits with banks are recorded at amortized cost and include acceptances we have purchased that were issued by other banks. Interest income earned on these deposits is recorded on an accrual basis.

## Note 3: Securities

Securities are divided into six types, each with a different purpose and accounting treatment. The types of securities we hold are as follows:

**Trading securities** are securities purchased for resale over a short period of time. Trading securities are recorded at fair value through profit or loss. Transaction costs and changes in fair value are recorded in our Consolidated Statement of Income in trading revenues.

**Fair value through profit or loss securities** are measured at fair value with changes in fair value and related transaction costs recorded in our Consolidated Statement of Income in securities gains and losses, other than trading, except as noted below. This category includes the following:

#### *Securities Designated at FVTPL*

In order to qualify for this designation, the security must have reliably measurable fair values and the designation eliminates or significantly reduces the inconsistent treatment that would otherwise arise from measuring the gains and losses on a different basis. Securities must be designated on initial recognition, and the designation is irrevocable. If these securities were not designated at FVTPL, they would be accounted for as either FVOCI or amortized cost.

We designate certain securities held by our insurance subsidiaries that support our insurance liabilities at fair value through profit or loss since the actuarial calculation of insurance liabilities is based on the fair value of the investments supporting them. This designation aligns the accounting result with the way the portfolio is managed on a fair value basis. The change in fair value of the securities is recorded in non-interest revenue, insurance revenue and the change in fair value of the liabilities is recorded in insurance claims, commissions and changes in policy benefit liabilities. The fair value of these investments as at October 31, 2018 of \$8,783 million (\$8,465 million as at October 31, 2017) is recorded in securities in our Consolidated Balance Sheet. The impact of recording these investments at fair value through profit or loss was a decrease of \$372 million in non-interest revenue, insurance revenue, for the year ended October 31, 2018 (increase of \$39 million for the year ended October 31, 2017).

#### *Securities Mandatorily Measured at FVTPL*

Securities managed on a fair value basis, but not held for trading, or debt securities whose cash flows do not represent solely payments of principal and interest and equity securities not held for trading are classified as FVTPL.

**Debt securities measured at amortized cost** are debt securities purchased with the objective of collecting contractual cash flows and those cash flows represent solely payments of principal and interest. These securities are initially recorded at fair value plus transaction costs and subsequently measured at amortized cost using the effective interest method. Impairment losses (recoveries) are recorded in our Consolidated Statement of Income in securities gains, other than trading. Interest income earned and amortization of premiums, discounts and transaction costs are recorded in our Consolidated Statement of Income in interest, dividend and fee income, securities.

**Debt securities measured at FVOCI** are debt securities purchased with the objective of both collecting contractual cash flows and selling the securities. The securities' cash flows represent solely payments of principal and interest. These securities may be sold in response to or in anticipation of changes in interest rates and resulting prepayment risk, changes in credit risk, changes in foreign currency risk, changes in funding sources or terms, or to meet liquidity needs.

Debt securities measured at FVOCI are initially recorded at fair value plus transaction costs. They are subsequently measured at fair value, with unrealized gains and losses recorded in our Consolidated Statement of Comprehensive Income until the security is sold or impaired. Gains and losses on disposal and impairment losses (recoveries) are recorded in our Consolidated Statement of Income in non-interest revenue, securities gains, other than trading. Interest income earned is recorded in our Consolidated Statement of Income in interest, dividend and fee income, securities using the effective interest method.

**Equity securities measured at FVOCI** are equity securities where we have elected to record changes in the fair value of the instrument in other comprehensive income as opposed to fair value through profit or loss. Gains or losses recorded on these instruments will never be recognized in profit or loss. Equity securities measured at FVOCI are not subject to an impairment assessment.

**Other securities** are investments in associates and joint ventures where we exert significant influence over operating, investing and financing decisions (generally companies in which we own between 20% and 50% of the voting shares). These are accounted for using the equity method of accounting. Our share of the net income or loss is recorded in investments in associates and joint ventures in our Consolidated Statement of Income. Any other comprehensive income amounts are reflected in the relevant section of our Consolidated Statement of Comprehensive Income.

We account for all of our securities transactions using settlement date accounting in our Consolidated Balance Sheet. Changes in fair value between the trade date and settlement date are recorded in net income, except for those related to securities measured at FVOCI, which are recorded in other comprehensive income.

### Impairment Review

Debt securities classified as amortized cost or FVOCI are assessed for impairment using the ECL model, with the exception of securities determined to have low credit risk where the allowance for credit losses is measured at a 12 month expected credit loss. A financial asset is considered to have low credit risk if the financial asset has a low risk of default, the borrower has a strong capacity to meet its contractual cash flow obligations in the near term and adverse changes in economic and business conditions in the longer term may, but will not necessarily, reduce the ability of the borrower to fulfill its contractual cash flow obligations.

### Classification of Securities

Our securities are classified as at October 31, 2018 under IFRS 9 and as at October 31, 2017 under IAS 39 as follows:

(Canadian \$ in millions)	2018	2017
Trading	99,697	99,069
FVTPL (1)	11,611	na
FVOCI - Debt and Equity (2)	62,440	na
Available-for-sale	na	54,075
Amortized cost (3)	6,485	na
Held-to-maturity	na	9,094
Other	702	960
	<b>180,935</b>	<b>163,198</b>

(1) Comprised of \$2,828 million mandatorily measured at fair value and \$8,783 million designated at fair value.

(2) Includes allowances for credit losses on FVOCI debt securities of \$2 million (na at October 31, 2017).

(3) Net of allowances for credit losses of \$1 million (na at October 31, 2017).

na - not applicable due to IFRS 9 adoption.

### Fair Value Measurement

For traded securities, quoted market value is considered to be fair value. Quoted market value is based on bid prices. For securities where market quotes are not available, we use estimation techniques to determine fair value. A discussion of fair value measurement is included in Note 17.

## Classified under IFRS 9

(Canadian \$ in millions, except as noted)

	Term to maturity					2018
	Within 1 year	1 to 3 years	3 to 5 years	5 to 10 years	Over 10 years	Total
<b>Trading Securities</b>						
Issued or guaranteed by:						
Canadian federal government	4,103	2,195	2,038	1,077	907	10,320
Canadian provincial and municipal governments	1,293	2,029	1,235	1,355	2,790	8,702
U.S. federal government	2,684	2,835	1,260	1,895	843	9,517
U.S. states, municipalities and agencies	756	135	29	114	182	1,216
Other governments	485	557	330	40	-	1,412
NHA MBS, U.S. agency MBS and CMO (1)	382	497	477	346	7,482	9,184
Corporate debt	2,635	1,821	1,295	1,413	2,034	9,198
Loans	14	82	55	48	-	199
Corporate equity	-	-	-	-	49,949	49,949
<b>Total trading securities</b>	<b>12,352</b>	<b>10,151</b>	<b>6,719</b>	<b>6,288</b>	<b>64,187</b>	<b>99,697</b>
<b>FVTPL Securities</b>						
Issued or guaranteed by:						
Canadian federal government	328	-	4	2	97	431
Canadian provincial and municipal governments	-	23	5	22	896	946
U.S. federal government	69	-	-	-	-	69
NHA MBS, U.S. agency MBS and CMO (1)	-	3	4	-	-	7
Corporate debt	616	56	125	692	5,331	6,820
Corporate equity	-	-	-	-	3,338	3,338
<b>Total FVTPL securities</b>	<b>1,013</b>	<b>82</b>	<b>138</b>	<b>716</b>	<b>9,662</b>	<b>11,611</b>
<b>FVOCI Securities</b>						
Issued or guaranteed by:						
Canadian federal government						
Amortized cost	6,600	4,036	1,711	537	-	12,884
Fair value	6,592	4,006	1,688	519	-	12,805
Yield (%)	1.52	1.58	2.09	2.14	-	1.64
Canadian provincial and municipal governments						
Amortized cost	3,200	1,229	1,742	713	12	6,896
Fair value	3,204	1,227	1,726	693	12	6,862
Yield (%)	1.36	1.81	2.67	2.59	3.58	1.90
U.S. federal government						
Amortized cost	462	1,604	7,116	8,221	-	17,403
Fair value	454	1,595	6,858	7,916	-	16,823
Yield (%)	2.39	2.61	1.98	2.35	-	2.22
U.S. states, municipalities and agencies						
Amortized cost	356	684	542	1,177	935	3,694
Fair value	355	678	540	1,158	924	3,655
Yield (%)	1.69	2.07	2.59	2.59	2.66	2.42
Other governments						
Amortized cost	1,193	1,187	2,135	303	-	4,818
Fair value	1,192	1,183	2,113	302	-	4,790
Yield (%)	1.82	2.21	2.74	2.87	-	2.39
NHA MBS (1)						
Amortized cost	306	62	2,014	-	-	2,382
Fair value	310	62	1,998	-	-	2,370
Yield (%)	1.95	1.32	2.00	-	-	1.98
U.S. agency MBS and CMO (1)						
Amortized cost	-	13	109	1,819	9,870	11,811
Fair value	-	13	106	1,761	9,437	11,317
Yield (%)	-	2.31	2.50	2.51	2.29	2.33
Corporate debt						
Amortized cost	672	1,992	569	509	41	3,783
Fair value	671	1,980	566	498	41	3,756
Yield (%)	1.45	2.86	2.87	3.24	4.02	2.67
Corporate equity						
Amortized cost	-	-	-	-	62	62
Fair value	-	-	-	-	62	62
Yield (%)	-	-	-	-	-	-
<b>Total cost or amortized cost</b>	<b>12,789</b>	<b>10,807</b>	<b>15,938</b>	<b>13,279</b>	<b>10,920</b>	<b>63,733</b>
<b>Total fair value</b>	<b>12,778</b>	<b>10,744</b>	<b>15,595</b>	<b>12,847</b>	<b>10,476</b>	<b>62,440</b>
<b>Yield (%)</b>	<b>1.55</b>	<b>2.09</b>	<b>2.23</b>	<b>2.44</b>	<b>2.32</b>	<b>2.13</b>
<b>Amortized Cost Securities</b>						
Issued or guaranteed by:						
Canadian provincial and municipal governments						
Amortized cost	230	280	143	179	-	832
Fair value	230	282	145	184	-	841
Other governments						
Amortized cost	-	3	7	-	-	10
Fair value	-	3	7	-	-	10
NHA MBS, U.S. agency MBS and CMO (1)						
Amortized cost	171	452	-	1,884	3,045	5,552
Fair value	171	454	-	1,808	2,913	5,346
Corporate debt						
Amortized cost	1	10	10	5	65	91
Fair value	1	10	10	5	65	91
<b>Total cost or amortized cost</b>	<b>402</b>	<b>745</b>	<b>160</b>	<b>2,068</b>	<b>3,110</b>	<b>6,485</b>
<b>Total fair value</b>	<b>402</b>	<b>749</b>	<b>162</b>	<b>1,997</b>	<b>2,978</b>	<b>6,288</b>
<b>Other Securities</b>						
Carrying value	-	-	-	-	702	702
<b>Total carrying value or amortized cost of securities</b>	<b>26,556</b>	<b>21,785</b>	<b>22,955</b>	<b>22,351</b>	<b>88,581</b>	<b>182,228</b>
<b>Total value of securities</b>	<b>26,545</b>	<b>21,722</b>	<b>22,612</b>	<b>21,919</b>	<b>88,137</b>	<b>180,935</b>
<b>Total by Currency</b> (in Canadian \$ equivalent)						
Canadian dollar	18,091	12,284	9,782	5,475	37,135	82,767
U.S. dollar	7,799	9,423	12,718	16,404	49,922	96,266
Other currencies	655	15	112	40	1,080	1,902
<b>Total securities</b>	<b>26,545</b>	<b>21,722</b>	<b>22,612</b>	<b>21,919</b>	<b>88,137</b>	<b>180,935</b>



## Classified under IAS 39

(Canadian \$ in millions, except as noted)	Term to maturity					2017
	Within 1 year	1 to 3 years	3 to 5 years	5 to 10 years	Over 10 years	Total
<b>Trading Securities</b>						
Issued or guaranteed by:						
Canadian federal government	4,862	1,527	2,021	1,313	1,104	10,827
Canadian provincial and municipal governments	812	1,343	714	1,991	2,467	7,327
U.S. federal government	1,332	1,758	2,000	1,906	2,477	9,473
U.S. states, municipalities and agencies	642	222	86	100	1,081	2,131
Other governments	85	438	266	34	-	823
NHA MBS, U.S. agency MBS and CMO (1)	147	571	203	8	2	931
Corporate debt	1,298	1,375	795	1,281	7,014	11,763
Loans	-	28	7	118	-	153
Corporate equity	-	-	-	-	55,641	55,641
<b>Total trading securities</b>	<b>9,178</b>	<b>7,262</b>	<b>6,092</b>	<b>6,751</b>	<b>69,786</b>	<b>99,069</b>
<b>Available-for-Sale Securities</b>						
Issued or guaranteed by:						
Canadian federal government						
Amortized cost	5,585	1,764	1,266	597	-	9,212
Fair value	5,578	1,749	1,262	591	-	9,180
Yield (%)	0.66	1.48	1.46	1.57	-	0.99
Canadian provincial and municipal governments						
Amortized cost	1,157	265	1,293	860	38	3,613
Fair value	1,156	266	1,310	855	40	3,627
Yield (%)	0.85	1.45	2.24	2.32	3.27	1.77
U.S. federal government						
Amortized cost	15	-	3,128	11,338	-	14,481
Fair value	17	-	3,115	11,137	-	14,269
Yield (%)	0.88	-	1.81	1.80	-	1.80
U.S. states, municipalities and agencies						
Amortized cost	370	563	463	1,329	1,333	4,058
Fair value	370	566	467	1,357	1,336	4,096
Yield (%)	1.63	1.78	2.26	2.40	1.71	2.00
Other governments						
Amortized cost	1,592	1,231	725	19	-	3,567
Fair value	1,593	1,225	722	18	-	3,558
Yield (%)	1.44	1.34	1.52	2.72	-	1.43
NHA MBS (1)						
Amortized cost	255	1,143	1,059	-	-	2,457
Fair value	262	1,141	1,052	-	-	2,455
Yield (%)	2.05	1.83	1.56	-	-	1.74
U.S. agency MBS and CMO - U.S. (1)						
Amortized cost	1	20	62	658	10,161	10,902
Fair value	1	19	62	659	10,020	10,761
Yield (%)	1.83	3.12	2.25	2.31	1.97	1.99
Corporate debt						
Amortized cost	995	2,082	737	607	93	4,514
Fair value	997	2,080	734	619	95	4,525
Yield (%)	0.75	2.08	2.48	3.08	3.64	2.02
Corporate equity						
Amortized cost	-	-	-	-	1,499	1,499
Fair value	-	-	-	-	1,604	1,604
Yield (%)	-	-	-	-	2.37	2.37
<b>Total cost or amortized cost</b>	<b>9,970</b>	<b>7,068</b>	<b>8,733</b>	<b>15,408</b>	<b>13,124</b>	<b>54,303</b>
<b>Total fair value</b>	<b>9,974</b>	<b>7,046</b>	<b>8,724</b>	<b>15,236</b>	<b>13,095</b>	<b>54,075</b>
Yield (%)	0.89	1.72	1.85	1.95	2.00	1.72
<b>Held-to-Maturity Securities</b>						
Issued or guaranteed by:						
Canadian federal government						
Amortized cost	1,855	-	-	-	-	1,855
Fair value	1,857	-	-	-	-	1,857
Canadian provincial and municipal governments						
Amortized cost	735	510	-	322	-	1,567
Fair value	737	512	-	341	-	1,590
NHA MBS, U.S. agency MBS and CMO (1)						
Amortized cost	191	485	364	999	3,633	5,672
Fair value	191	486	366	997	3,609	5,649
<b>Total cost or amortized cost</b>	<b>2,781</b>	<b>995</b>	<b>364</b>	<b>1,321</b>	<b>3,633</b>	<b>9,094</b>
<b>Total fair value</b>	<b>2,785</b>	<b>998</b>	<b>366</b>	<b>1,338</b>	<b>3,609</b>	<b>9,096</b>
<b>Other Securities</b>						
Carrying value	7	21	13	38	881	960
<b>Total carrying value or amortized cost of securities</b>	<b>21,936</b>	<b>15,346</b>	<b>15,202</b>	<b>23,518</b>	<b>87,424</b>	<b>163,426</b>
<b>Total value of securities</b>	<b>21,940</b>	<b>15,324</b>	<b>15,193</b>	<b>23,346</b>	<b>87,395</b>	<b>163,198</b>
<b>Total by Currency (in Canadian \$ equivalent)</b>						
Canadian dollar	16,959	8,546	7,222	6,235	41,261	80,223
U.S. dollar	3,948	6,662	7,916	17,087	44,384	79,997
Other currencies	1,033	116	55	24	1,750	2,978
<b>Total securities</b>	<b>21,940</b>	<b>15,324</b>	<b>15,193</b>	<b>23,346</b>	<b>87,395</b>	<b>163,198</b>

(1) These amounts are supported by insured mortgages or issued by U.S. agencies and government-sponsored enterprises. NHA refers to the National Housing Act, MBS refers to mortgage-backed securities and CMO refers to collateralized mortgage obligations.

Yields in the tables above are calculated using the cost of the security and the contractual interest rate associated with each security, adjusted for any amortization of premiums and discounts. Tax effects are not taken into consideration. The term to maturity included in the table above is based on the contractual maturity date of the security. Actual maturities could differ, as issuers may have the right to call or prepay obligations. Equity securities with no maturity date are included in the over 10 years category.

## Unrealized Gains and Losses

The following table summarizes the unrealized gains and losses on FVOCI securities as at October 31, 2018 under IFRS 9 and the unrealized gains and losses on available-for-sale securities as at October 31, 2017 under IAS 39.

(Canadian \$ in millions)	2018				2017			
	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value
Issued or guaranteed by:								
Canadian federal government	12,884	1	80	12,805	9,212	6	38	9,180
Canadian provincial and municipal governments	6,896	8	42	6,862	3,613	29	15	3,627
U.S. federal government	17,403	4	584	16,823	14,481	12	224	14,269
U.S. states, municipalities and agencies	3,694	16	55	3,655	4,058	43	5	4,096
Other governments	4,818	2	30	4,790	3,567	3	12	3,558
NHA MBS	2,382	6	18	2,370	2,457	9	11	2,455
U.S. agency MBS and CMO	11,811	2	496	11,317	10,902	6	147	10,761
Corporate debt	3,783	6	33	3,756	4,514	23	12	4,525
Corporate equity	62	-	-	62	1,499	121	16	1,604
<b>Total</b>	<b>63,733</b>	<b>45</b>	<b>1,338</b>	<b>62,440</b>	<b>54,303</b>	<b>252</b>	<b>480</b>	<b>54,075</b>

Unrealized gains (losses) may be offset by related (losses) gains on hedge contracts.

## Interest, Dividend and Fee Income

Interest, dividend and fee income has been included in our consolidated financial statements as follows, excluding other securities and trading securities. Related income for trading securities is included in Note 17 Trading-Related Revenue.

(Canadian \$ in millions)	2018	2017	2016
FVTPL	16	na	na
FVOCI	1,118	na	na
Amortized cost	172	na	na
Available-for-sale securities	na	662	509
Held-to-maturity securities	na	150	143
<b>Total</b>	<b>1,306</b>	<b>812</b>	<b>652</b>

na - not applicable due to IFRS 9 adoption.

Certain comparative figures have been reclassified to conform with the current year's presentation.

## Non-Interest Revenue

Net gains and losses from securities, excluding net realized and unrealized gains on trading securities, have been included in our Consolidated Statement of Income as follows:

(Canadian \$ in millions)	2018	2017	2016
<b>Non-Interest Revenue</b>			
FVTPL securities	106	na	na
FVOCI securities (1)			
Gross realized gains	363	228	59
Gross realized (losses)	(216)	(99)	(16)
Unrealized gains on investments reclassified from available-for-sale to other	na	-	7
Other securities, net realized and unrealized gains	-	49	51
Impairment write-downs	(14)	(7)	(17)
<b>Securities gains, other than trading (2)</b>	<b>239</b>	<b>171</b>	<b>84</b>

(1) Realized gains (losses) are net of unrealized gains (losses) on related hedge contracts. Fiscal 2017 and prior years represent available-for-sale securities (Note 1).

(2) The following amounts of income related to our insurance operations were included in non-interest revenue, insurance revenue, in our Consolidated Statement of Income: Interest, dividend and fee income of \$354 million for the year ended October 31, 2018 (\$325 million in 2017); and securities gains, other than trading, of \$1 million for the year ended October 31, 2018 (\$nil in 2017).

Unrealized gains and losses on trading securities are included in trading-related revenue in Note 17.

na - not applicable due to IFRS 9 adoption.

## Note 4: Loans and Allowance for Credit Losses

Loans are initially measured at fair value plus directly attributable costs, and are subsequently measured at amortized cost using the effective interest method. The effective interest method allocates interest income over the expected term of the loan by applying the effective interest rate to the carrying amount of the loan. The effective interest rate is defined as the rate that exactly discounts estimated future cash receipts through the expected term of the loan to the net carrying amount of the loan. Under the effective interest method, the amount recognized in interest, dividend and fee income, loans, varies over the term of the loan based on the principal outstanding. The treatment of interest income for impaired loans is described below.

### Securities Borrowed or Purchased Under Resale Agreements

Securities borrowed or purchased under resale agreements represent the amounts we will receive as a result of our commitment to return or resell securities that we have borrowed or purchased, back to the original lender or seller, on a specified date at a specified price. We account for these instruments as if they were loans.

### Lending Fees

Lending fees arise in Personal and Commercial Banking and Capital Markets. The accounting treatment for lending fees varies depending on the transaction. Some loan origination, restructuring and renegotiation fees are recorded as interest income over the term of the loan, while other lending fees are taken into income at the time of loan origination. Commitment fees are calculated as a percentage of the facility balance at the end

of the period. The fees are recorded as interest income over the term of the loan, unless we believe the loan commitment will not be used. In the latter case, commitment fees are recorded as lending fees earned over the commitment period. Loan syndication fees are payable and included in lending fees at the time the syndication is completed, unless the yield on any loans we retain is less than that of other comparable lenders involved in the financing. In the latter case, an appropriate portion of the syndication fee is recorded as interest income over the term of the loan.

### Impaired Loans

We classify a loan as impaired when one or more loss events have occurred, such as bankruptcy, default or delinquency. Generally, consumer loans in both Canada and the U.S. are classified as impaired when payment is contractually 90 days past due, or one year past due for residential mortgages if guaranteed by the Government of Canada. Credit card loans are immediately written off when principal or interest payments are 180 days past due, and are not reported as impaired. In Canada, consumer instalment loans, other personal loans and some small business loans are normally written off when they are one year past due. In the U.S., all consumer loans are generally written off when they are 180 days past due, except for non-real estate term loans, which are generally written off when they are 120 days past due. For the purpose of measuring the amount to be written off, the determination of the recoverable amount includes an estimate of future recoveries.

Corporate and commercial loans are classified as impaired when we determine there is no longer reasonable assurance that principal or interest will be collected in their entirety on a timely basis. Generally, we consider corporate and commercial loans to be impaired when payments are 90 days past due. Corporate and commercial loans are written off following a review on an individual loan basis that confirms all recovery attempts have been exhausted.

A loan will be reclassified to performing status when we determine that there is reasonable assurance of full and timely repayment of interest and principal in accordance with the terms and conditions of the loan, and that none of the criteria for classification of the loan as impaired continue to apply.

Loans are in default when the borrower is unlikely to pay its credit obligations in full without recourse by the bank, such as realizing security, or when the borrower's payments are past due more than 90 days (180 days for credit card loans). Overdrafts are considered to be past due once the customer has breached an advised limit or been advised of a limit smaller than currently outstanding or, in the case of retail overdrafts, has not brought the overdraft down to a \$nil balance within a specified time period.

Our average gross impaired loans were \$2,115 million for the year ended October 31, 2018 (\$2,248 million in 2017). Our average impaired loans, net of the specific allowance, were \$1,706 million for the year ended October 31, 2018 (\$1,838 million in 2017).

Once a loan is identified as impaired, we continue to recognize interest income based on the original effective interest rate on the loan amount net of its related allowance. In the periods following the recognition of impairment, adjustments to the allowance for these loans reflecting the time value of money are recognized and presented as interest income. Interest income on impaired loans of \$67 million was recognized for the year ended October 31, 2018 (\$75 million in 2017 and \$74 million in 2016).

During the year ended October 31, 2018, we recorded a net gain of \$4 million before tax (\$28 million in 2017 and \$5 million in 2016) on the sale of impaired and written-off loans.

### Allowance for Credit Losses ("ACL")

The allowance for credit losses recorded in our Consolidated Balance Sheet is maintained at a level that we consider adequate to absorb credit-related losses on our loans and other credit instruments. The allowance for credit losses amounted to \$1,870 million as at October 31, 2018, of which \$1,639 million was recorded in loans and \$231 million was recorded in other liabilities in our Consolidated Balance Sheet.

#### *Allowance on Performing Loans*

We maintain an allowance in order to cover impairment in the existing portfolio for loans that have not yet been individually identified as impaired. Our approach to establishing and maintaining the allowance on performing loans is based on the requirements of IFRS, considering guidelines issued by OSFI.

Under the IFRS 9 ECL methodology, an allowance is recorded for expected credit losses on financial assets regardless of whether there has been an actual impairment. We recognize a loss allowance at an amount equal to 12 month expected credit losses, if the credit risk at the reporting date has not increased significantly since initial recognition (Stage 1). We will record expected credit losses over the remaining life of performing financial assets which are considered to have experienced a significant increase in credit risk (Stage 2).

The determination of a significant increase in credit risk takes into account many different factors and varies by product and risk segment. The main factors considered in making this determination are relative changes in probability-weighted probability of default since origination and certain other criteria, such as 30-day past due and watchlist status.

For each exposure, ECL is a function of the probability of default ("PD"), exposure at default ("EAD") and loss given default ("LGD"), with the timing of the loss also considered, and is estimated by incorporating forward-looking economic information and through the use of experienced credit judgment to reflect factors not captured in ECL models.

PD represents the likelihood that a loan will not be repaid and will go into default in either a 12 month horizon for Stage 1 or a lifetime horizon for Stage 2. The PD for each individual instrument is modelled based on historical data and is estimated based on current market conditions and reasonable and supportable information about future economic conditions.

EAD is modelled on historical data and represents an estimate of the outstanding amount of credit exposure at the time a default may occur. For off-balance sheet and undrawn amounts, EAD includes an estimate of any further amounts to be drawn at the time of default.

LGD is the amount that may not be recovered in the event of default and is modelled based on historical data and reasonable and supportable information about future economic conditions, where appropriate. LGD takes into consideration the amount and quality of any collateral held.

We consider past events, current market conditions and reasonable forward-looking supportable information about future economic conditions in calculating the amount of expected losses. In assessing information about possible future economic conditions, we utilize multiple economic scenarios including our base case, which represents, in our view, the most probable outcome, as well as benign and adverse forecasts, all of which are developed by our Economics group. Key economic variables used in the determination of the allowance for credit losses reflect the geographic diversity of our portfolios, where appropriate.

In considering the lifetime of a loan, the contractual period of the loan, including prepayment, extension and other options, is generally used. For revolving instruments, such as credit cards, which may not have a defined contractual period, the lifetime is based on historical behaviour.

Our ECL methodology also requires the use of experienced credit judgment to incorporate the estimated impact of factors that are not captured in the modelled ECL results.

#### *Allowance on Impaired Loans*

We maintain an allowance on individually identified impaired loans (Stage 3) of \$370 million on our gross impaired loans of \$1,936 million, to reduce their carrying value to an expected recoverable amount of \$1,566 million as at October 31, 2018 (\$1,827 million as at October 31, 2017). We review our loans on an ongoing basis to assess whether any loans should be classified as impaired and whether an allowance or write-off should be recorded (excluding credit card loans, which are classified as impaired and written off when principal or interest payments are 180 days past due). The review of individually significant problem loans is conducted at least quarterly by the account managers, each of whom assesses the ultimate collectability and estimated recoveries for a specific loan based on all events and conditions that are relevant to the loan. This assessment is then reviewed and approved by an independent credit officer.

#### **Individually Significant Impaired Loans**

To determine the amount we expect to recover from an individually significant impaired loan, we use the value of the estimated future cash flows discounted at the loan's original effective interest rate. The determination of estimated future cash flows of a collateralized impaired loan reflects the expected realization of the underlying security, net of expected costs and any amounts legally required to be paid to the borrower. Security can vary by type of loan and may include cash, securities, real estate properties, accounts receivable, guarantees, inventory or other capital assets.

#### **Individually Insignificant Impaired Loans**

Residential mortgages, consumer instalment and other personal loans are individually insignificant and may be individually assessed or collectively assessed for losses at the time of impairment, taking into account historical loss experience and expectations of future economic conditions. Collectively assessed loans are grouped together by similar risk characteristics, such as type of instrument, geographic location, industry, type of collateral and term to maturity.

*Loans Credit Risk Exposure*

The following table sets out our credit risk exposure for all loans carried at amortized cost or FVTPL as at October 31, 2018. Stage 1 represents those performing loans carried with a 12 month expected credit loss, Stage 2 represents those performing loans carried with a lifetime expected credit loss, and Stage 3 represents those loans with a lifetime credit loss that are credit impaired.

(Canadian \$ in millions)	2018			
	Stage 1	Stage 2	Stage 3	Total
<b>Loans: Residential mortgages</b>				
Exceptionally low	-	-	-	-
Very low	76,314	125	-	76,439
Low	18,975	2,479	-	21,454
Medium	12,621	3,765	-	16,386
High	90	445	-	535
Not rated	4,250	181	-	4,431
Impaired	-	-	375	375
Allowance for credit losses	20	37	19	76
Carrying amount	112,230	6,958	356	119,544
<b>Loans: Consumer instalment and other personal</b>				
Exceptionally low	20,236	20	-	20,256
Very low	13,364	222	-	13,586
Low	12,581	364	-	12,945
Medium	7,707	4,153	-	11,860
High	127	1,657	-	1,784
Not rated	2,105	168	-	2,273
Impaired	-	-	521	521
Allowance for credit losses	83	312	143	538
Carrying amount	56,037	6,272	378	62,687
<b>Loans: Credit cards</b>				
Exceptionally low	2,403	4	-	2,407
Very low	1,140	11	-	1,151
Low	943	107	-	1,050
Medium	1,742	874	-	2,616
High	108	428	-	536
Not rated	568	1	-	569
Impaired	-	-	-	-
Allowance for credit losses	39	191	-	230
Carrying amount	6,865	1,234	-	8,099
<b>Loans: Business and government (1)</b>				
Acceptable				
Investment grade	109,774	2,148	-	111,922
Sub-investment grade	88,348	7,308	-	95,656
Watchlist	-	4,423	-	4,423
Impaired	-	-	1,040	1,040
Allowance for credit losses	232	355	208	795
Carrying amount	197,890	13,524	832	212,246
<b>Commitments and financial guarantee contracts</b>				
Acceptable				
Investment grade	116,108	1,722	-	117,830
Sub-investment grade	44,895	3,426	-	48,321
Watchlist	-	1,650	-	1,650
Impaired	-	-	242	242
Allowance for credit losses	108	96	27	231
Carrying amount	160,895	6,702	215	167,812

(1) Includes customers' liability under acceptances.

The following table shows the continuity in the loss allowance by each product type as at October 31, 2018.

(Canadian \$ in millions)

For the twelve months ended	Stage 1	Stage 2	Stage 3	Total
<b>Loans: Residential mortgages</b>				
Balance as at November 1, 2017	16	34	49	99
Transfer to Stage 1	34	(31)	(3)	-
Transfer to Stage 2	(1)	7	(6)	-
Transfer to Stage 3	-	(9)	9	-
Net remeasurement of loss allowance	(37)	42	19	24
Loan originations	10	-	-	10
Derecognitions and maturities	(2)	(6)	-	(8)
Total provision for credit losses ("PCL") (1)	4	3	19	26
Write-offs	-	-	(20)	(20)
Recoveries of previous write-offs	-	-	7	7
Foreign exchange and other	-	1	(11)	(10)
Balance as at October 31, 2018	20	38	44	102
<b>Loans: Consumer instalment and other personal</b>				
Balance as at November 1, 2017	76	357	137	570
Transfer to Stage 1	214	(200)	(14)	-
Transfer to Stage 2	(22)	105	(83)	-
Transfer to Stage 3	(4)	(162)	166	-
Net remeasurement of loss allowance	(196)	272	162	238
Loan originations	39	-	-	39
Derecognitions and maturities	(18)	(50)	-	(68)
Total PCL (1)	13	(35)	231	209
Write-offs	-	-	(301)	(301)
Recoveries of previous write-offs	-	-	92	92
Foreign exchange and other	1	4	(15)	(10)
Balance as at October 31, 2018	90	326	144	560
<b>Loans: Credit cards</b>				
Balance as at November 1, 2017	83	254	-	337
Transfer to Stage 1	177	(177)	-	-
Transfer to Stage 2	(37)	37	-	-
Transfer to Stage 3	(1)	(195)	196	-
Net remeasurement of loss allowance	(164)	342	20	198
Loan originations	19	-	-	19
Derecognitions and maturities	(3)	(42)	-	(45)
Total PCL (1)	(9)	(35)	216	172
Write-offs	-	-	(319)	(319)
Recoveries of previous write-offs	-	-	103	103
Balance as at October 31, 2018	74	219	-	293
<b>Loans: Business and government</b>				
Balance as at November 1, 2017	268	410	234	912
Transfer to Stage 1	136	(128)	(8)	-
Transfer to Stage 2	(31)	66	(35)	-
Transfer to Stage 3	(1)	(61)	62	-
Net remeasurement of loss allowance	(155)	203	215	263
Loan originations	163	-	-	163
Derecognitions and maturities	(80)	(86)	-	(166)
Model changes	(7)	(3)	-	(10)
Total PCL (1)	25	(9)	234	250
Write-offs	-	-	(297)	(297)
Recoveries of previous write-offs	-	-	59	59
Foreign exchange and other	5	7	(21)	(9)
Balance as at October 31, 2018	298	408	209	915
Total as at October 31, 2018	482	991	397	1,870
Comprised of: Loans	374	895	370	1,639
Other credit instruments (2)	108	96	27	231

(1) Excludes provision for credit losses on other assets of \$5 million.

(2) Recorded in other liabilities on the Consolidated Balance Sheet.



The following table shows the continuity of our allowance for credit losses under IAS 39 as at October 31, 2017:

(Canadian \$ in millions)	Residential mortgages		Credit card, consumer instalment and other personal loans		Business and government loans		Total	
	2017	2016	2017	2016	2017	2016	2017	2016
Impairment allowances (specific ACL), beginning of year	59	69	123	113	250	210	432	392
Amounts written off	(27)	(38)	(631)	(616)	(296)	(349)	(954)	(1,003)
Recoveries of amounts written off in previous years	16	16	199	173	50	154	265	343
Charge to income statement (specific PCL)	11	24	464	478	347	269	822	771
Foreign exchange and other movements	(10)	(12)	(18)	(25)	(117)	(34)	(145)	(71)
Specific ACL, end of year	49	59	137	123	234	250	420	432
Collective ACL, beginning of year	71	111	596	714	1,015	835	1,682	1,660
Charge (recovery) to income statement (collective PCL)	(1)	(42)	(6)	(120)	(69)	162	(76)	-
Foreign exchange and other movements	(1)	2	(4)	2	(25)	18	(30)	22
Collective ACL, end of year	69	71	586	596	921	1,015	1,576	1,682
Total ACL	118	130	723	719	1,155	1,265	1,996	2,114
Comprised of: Loans	93	104	722	719	1,018	1,102	1,833	1,925
Other credit instruments (1)	25	26	1	-	137	163	163	189

(1) The total specific and collective allowances related to other credit instruments are included in other liabilities.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Significant changes in the gross balances, including originations, maturities and repayments in the normal course of operations, impact the allowance for credit losses.

Loans and allowance for credit losses by geographic region as at October 31, 2018 under IFRS 9 and as at October 31, 2017 under IAS 39 are as follows:

(Canadian \$ in millions)	2018				2017			
	Gross amount	Allowance on impaired loans (2)	Allowance on performing loans (3)	Net amount	Gross amount	Specific allowance (2)	Collective allowance (3)	Net amount
By geographic region: (1)								
Canada	244,837	189	689	243,959	233,672	212	799	232,661
United States	131,247	181	574	130,492	115,029	161	641	114,227
Other countries	9,546	-	6	9,540	11,639	20	-	11,619
Total	385,630	370	1,269	383,991	360,340	393	1,440	358,507

(1) Geographic region is based upon the country of ultimate risk.

(2) Excludes allowance for credit losses on impaired loans of \$27 million for other credit instruments, which is included in other liabilities (\$27 million in 2017).

(3) Excludes allowance for credit losses on performing loans of \$204 million for other credit instruments, which is included in other liabilities (\$136 million in 2017).

Certain comparative figures have been reclassified to conform with the current year's presentation.

Impaired loans, including the related allowances, as at October 31, 2018 under IFRS 9 and as at October 31, 2017 under IAS 39 are as follows:

(Canadian \$ in millions)	Gross impaired amount (1)		Allowance on impaired loans (3)		Specific allowance (3)		Net impaired amount	
	2018	2017	2018	2017	2018	2017	2018	2017
Residential mortgages	375	391	19		24		356	367
Consumer instalment and other personal loans	521	556	143		136		378	420
Business and government loans	1,040	1,273	208		233		832	1,040
Total	1,936	2,220	370		393		1,566	1,827
By geographic region: (2)								
Canada	735	793	189		212		546	581
United States	1,201	1,377	181		161		1,020	1,216
Other countries	-	50	-		20		-	30
Total	1,936	2,220	370		393		1,566	1,827

(1) Excludes purchased credit impaired loans.

(2) Geographic region is based upon the country of ultimate risk.

(3) Excludes allowance for credit losses on impaired loans of \$27 million for other credit instruments, which is included in other liabilities (\$27 million in 2017).

Fully secured loans with amounts past due between 90 and 180 days that we have not classified as impaired totalled \$49 million and \$62 million as at October 31, 2018 and 2017, respectively.

Certain comparative figures have been reclassified to conform with the current year's presentation.

## Loans Past Due Not Impaired

Loans that are past due but not classified as impaired are loans where our customers have failed to make payments when contractually due, but for which we expect the full amount of principal and interest payments to be collected, or which are held at fair value. The following table presents loans that are past due but not classified as impaired as at October 31, 2018 and 2017.

(Canadian \$ in millions)	1 to 29 days		30 to 89 days		90 days or more		Total	
	2018	2017	2018	2017	2018	2017	2018	2017
Residential mortgages (1)	660	649	513	438	21	19	1,194	1,106
Credit card, consumer instalment and other personal loans	1,431	1,480	415	466	88	94	1,934	2,040
Business and government loans	611	589	268	297	55	72	934	958
<b>Total</b>	<b>2,702</b>	<b>2,718</b>	<b>1,196</b>	<b>1,201</b>	<b>164</b>	<b>185</b>	<b>4,062</b>	<b>4,104</b>

(1) The percentage of loans 90 days or more past due but not impaired that were guaranteed by the Government of Canada is 66% for 2018 and 67% for 2017.

## ECL Sensitivity and Key Economic Variables

The allowance for performing loans is sensitive to changes in both economic forecasts and the probability-weight assigned to each forecast scenario. Many of the factors have a high degree of interdependency although there is no single factor to which loan impairment allowances as a whole are sensitive.

If we assumed a 100% base case economic forecast and included the impact of loan migration by restaging, with other assumptions held constant including the application of experienced credit judgment, the allowance for performing loans would be approximately \$1,250 million as at October 31, 2018 compared to the reported allowance for performing loans of \$1,473 million.

If we assumed a 100% adverse economic forecast and included the impact of loan migration by restaging, with other assumptions held constant including the application of experienced credit judgment, the allowance for performing loans would be approximately \$2,650 million as at October 31, 2018, compared to the reported allowance for performing loans of \$1,473 million.

Actual results in a recession will differ as our portfolio will change through time due to migration, growth, risk mitigation actions and other factors. In addition, our allowance will reflect the three economic scenarios used in assessing the allowance with weightings attached to adverse and benign scenarios often unequally weighted and the weightings will change through time.

The following table shows the key economic variables we use to estimate our allowance on performing loans during the forecast period. The values shown represent the end of period national average values for the first 12 months and then the national average for the remaining horizon. While the values disclosed below are national variables, in our underlying models we use regional variables where considered appropriate.

As at October 31, 2018	Benign scenario		Base scenario		Adverse scenario	
	First 12 months	Remaining horizon (1)	First 12 months	Remaining horizon (1)	First 12 months	Remaining horizon (1)
Real gross domestic product (2)						
Canada	3.1%	2.4%	1.8%	1.6%	(3.2)%	0.8%
U.S.	2.9%	1.9%	2.4%	1.6%	(2.9)%	0.9%
Corporate BBB 10-year spread						
Canada	2.0%	2.1%	2.3%	2.3%	4.7%	3.9%
U.S.	1.8%	2.0%	2.2%	2.3%	4.3%	3.5%
Unemployment rates						
Canada	5.4%	5.2%	5.6%	5.6%	9.3%	9.3%
U.S.	3.2%	3.1%	3.6%	3.7%	6.7%	6.8%
Housing Price Index						
Canada (3)	2.4%	2.6%	1.4%	1.8%	(12.8)%	(3.2)%
U.S. (4)	5.1%	4.3%	3.6%	3.0%	(7.3)%	(1.2)%

(1) The remaining forecast period is two years.

(2) Real gross domestic product is based on year over year growth.

(3) In Canada, we use the HPI Benchmark Composite.

(4) In the U.S., we use the National Case-Shiller House Price Index.

The ECL approach requires the recognition of credit losses based on up to 12 months of expected losses for performing loans (Stage 1) and the recognition of lifetime expected losses on performing loans that have experienced a significant increase in credit risk since origination (Stage 2). Under our current probability-weighted scenarios, if all our performing loans were in Stage 1, our models would generate an allowance for performing loans of approximately \$1,000 million compared to the reported allowance for performing loans of \$1,473 million.

## Renegotiated Loans

From time to time we modify the contractual terms of a loan due to the poor financial condition of the borrower. We assess renegotiated loans for impairment consistent with our existing policies for impairment. When renegotiation leads to significant concessions being granted, and the concessions are for economic or legal reasons related to the borrower's financial difficulty that we would not otherwise consider, the loan is classified as impaired. We consider one or a combination of the following to be significant concessions: (1) a reduction of the stated interest rate, (2) an extension of the maturity date or dates at a stated interest rate lower than the current market rate for a new loan with similar terms, or (3) forgiveness of principal or accrued interest.

Renegotiated loans are permitted to remain in performing status if the modifications are not considered to be significant, or are returned to performing status when none of the criteria for classification as impaired continue to apply.

The carrying value of our renegotiated loans was \$1,129 million as at October 31, 2018 (\$1,064 million in 2017). Renegotiated loans of \$541 million were classified as performing during the year ended October 31, 2018 (\$509 million in 2017). Renegotiated loans of \$53 million were written off in the year ended October 31, 2018 (\$36 million in 2017).

## Foreclosed Assets

Property or other assets that we receive from borrowers to satisfy their loan commitments are classified as either held for use or held for sale according to management's intention and are recorded at their carrying amount.

During the year ended October 31, 2018, we foreclosed on impaired loans and received \$117 million of real estate properties that we classified as held for sale (\$62 million in 2017).

As at October 31, 2018, real estate properties held for sale totalled \$58 million (\$55 million in 2017). These properties are disposed of when considered appropriate. During the year ended October 31, 2018, we recorded an impairment loss of \$10 million on real estate properties classified as held for sale (\$10 million in 2017 and \$18 million in 2016).

### Write-offs Subject to Collection Efforts

Generally, we continue to seek recovery on amounts that were written off during the period unless the loan is sold, we no longer have the right to collect or we have exhausted all reasonable efforts to collect.

### Collateral

Collateral is used to manage credit risk related to securities borrowed or purchased under resale agreements, residential mortgages, consumer instalment and other personal loans and business and government loans. Additional information on our collateral requirements is included in Notes 14 and 24 as well as in the blue-tinted font in the Enterprise-Wide Risk Management section of Management's Discussion and Analysis on pages 87 and 88 of this report.

## Note 5: Risk Management

We have an enterprise-wide approach to the identification, measurement, monitoring and control of risks faced across our organization. The key risks related to our financial instruments are classified as credit and counterparty, market, and liquidity and funding risk.

### Credit and Counterparty Risk

Credit and counterparty risk is the potential for loss due to the failure of a borrower, endorser, guarantor or counterparty to repay a loan or honour another predetermined financial obligation. Credit risk arises predominantly with respect to loans, over-the-counter and centrally cleared derivatives and other credit instruments. This is the most significant measurable risk that we face.

Our risk management practices and key measures are disclosed in the text and tables presented in a blue-tinted font in the Enterprise-Wide Risk Management section of Management's Discussion and Analysis on pages 87 to 91 of this report. Additional information on credit risk related to loans and derivatives is disclosed in Notes 4 and 8, respectively.

### Market Risk

Market risk is the potential for adverse changes in the value of our assets and liabilities resulting from changes in market variables such as interest rates, foreign exchange rates, equity and commodity prices and their implied volatilities, and credit spreads, and includes the risk of credit migration and default in our trading book. We incur market risk in our trading and underwriting activities and in the management of structural market risk in our banking and insurance activities.

Our market risk management practices and key measures are disclosed in the text and tables presented in a blue-tinted font in the Enterprise-Wide Risk Management section of Management's Discussion and Analysis on pages 95 to 99 of this report.

### Liquidity and Funding Risk

Liquidity and funding risk is the potential for loss if we are unable to meet our financial commitments in a timely manner at reasonable prices as they become due. It is our policy to ensure that sufficient liquid assets and funding capacity are available to meet financial commitments, including liabilities to depositors and suppliers, and lending, investment and pledging commitments, even in times of stress. Managing liquidity and funding risk is essential to maintaining a safe and sound enterprise, depositor confidence and earnings stability.

Our liquidity and funding risk management practices and key measures are disclosed in the text presented in a blue-tinted font in the Enterprise-Wide Risk Management section of Management's Discussion and Analysis on pages 100 to 108 of this report.

## Note 6: Transfer of Assets

### Loan Securitization

We sell Canadian mortgage loans to third-party Canadian securitization programs, including the Canada Mortgage Bond program, directly to third-party investors under the National Housing Act Mortgage-Backed Securities program and under our own program. We assess whether substantially all of the risks and rewards of the loans have been transferred to determine if they qualify for derecognition.

Under these programs, we are entitled to the payment over time of the excess of the sum of interest and fees collected from customers, in connection with the loans that were sold, over the yield paid to investors, less credit losses and other costs. Since we continue to be exposed to substantially all of the prepayment, interest rate and credit risk associated with the securitized loans, they do not qualify for derecognition. We continue to recognize the loans and the related cash proceeds as secured financing in our Consolidated Balance Sheet. The interest and fees collected, net of the yield paid to investors, is recorded in net interest income using the effective interest method over the term of the securitization. Credit losses associated with the loans are recorded in the provision for credit losses. During the year ended October 31, 2018, we sold \$8,062 million of mortgage loans to these programs (\$8,707 million in 2017).

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

(Canadian \$ in millions)	2018		2017	
	Carrying amount of assets (1)	Carrying amount of associated liabilities	Carrying amount of assets (1)	Carrying amount of associated liabilities
Residential mortgages	5,569		4,797	
Other related assets (2)	11,640		12,091	
Total (3)	17,209	16,925	16,888	16,621

(1) Carrying amount of loans is net of allowance.

(2) Other related assets represent payments received on account of loans pledged under securitization programs that have not yet been applied against the associated liabilities. The payments received are held on behalf of the investors in the securitization vehicles until principal payments are required to be made on the associated liabilities. In order to compare all assets supporting the associated liabilities, this amount is added to the carrying amount of the securitized assets in the table above.

(3) The fair values of assets and associated liabilities are \$17,105 million and \$16,763 million, respectively, as at October 31, 2018 (\$16,847 million and \$16,746 million, respectively, in 2017).

We retain the mortgage servicing rights for certain mortgage loans purchased or originated in the U.S. which are sold and derecognized. During the year ended October 31, 2018, we sold \$936 million of these loans (\$1,012 million in 2017) and recognized \$17 million in mortgage servicing rights (\$17 million in 2017) due to our continued involvement.

### Securities Lent or Sold Under Repurchase Agreements

Securities lent or sold under repurchase agreements represent short-term funding transactions in which we sell securities that we own and simultaneously commit to repurchase the same securities at a specified price on a specified date in the future. We retain substantially all of the risks and rewards associated with the securities and we continue to recognize them in our Consolidated Balance Sheet, with the obligation to repurchase these securities recorded as secured borrowing transactions at the amount owing. The interest expense related to these liabilities is recorded on an accrual basis. Additional information on securities lent or sold under repurchase agreements is provided in Note 14.

## Note 7: Structured Entities

We enter into certain transactions in the ordinary course of business which involve the establishment of structured entities ("SEs") to facilitate or secure customer transactions and to obtain alternate sources of funding. We are required to consolidate an SE if we control the entity. We control an SE when we have power over the SE, exposure to variable returns as a result of our involvement, and the ability to exercise power to affect the amount of our returns.

In assessing whether we control an SE, we consider the entire arrangement to determine the purpose and design of the SE, the nature of any rights held through contractual arrangements and whether we are acting as a principal or agent.

We perform a reassessment of consolidation if facts and circumstances indicate that there have been changes to one or more of the elements of control over the SE. See Note 1 for more information on our basis of consolidation.

### Consolidated Structured Entities

#### Bank Securitization Vehicles

We use securitization vehicles to securitize our Canadian credit card loans, Canadian real estate lines of credit and Canadian auto loans in order to obtain alternate sources of funding. The structure of these vehicles limits the activities they can undertake and the types of assets they can hold, and the vehicles have limited decision-making authority. The vehicles issue term asset-backed securities to fund their activities. We control and consolidate these vehicles, as we have the key decision-making powers necessary to obtain the majority of the benefits of their activities.

The following table presents the carrying amount and fair value of transferred assets that did not qualify for derecognition and the associated liabilities issued by our bank securitization vehicles:

(Canadian \$ in millions)	2018		2017	
	Carrying amount of assets (1)	Carrying amount of associated liabilities	Carrying amount of assets (1)	Carrying amount of associated liabilities
Credit card receivables	7,246	5,096	7,058	4,115
Consumer instalment and other personal (2)	6,827	3,083	5,699	2,295
Total (3)	14,073	8,179	12,757	6,410

(1) Carrying amount of loans is net of allowance.

(2) Includes Canadian real estate lines of credit and Canadian auto loans.

(3) The fair values of assets and associated liabilities are \$14,045 million and \$8,134 million, respectively, as at October 31, 2018 (\$12,753 million and \$6,403 million, respectively, in 2017).

Certain comparative figures have been reclassified to conform with the current year's presentation.

#### U.S. Customer Securitization Vehicle

We sponsor one customer securitization vehicle (also referred to as a bank-sponsored multi-seller conduit) that provides our customers with alternate sources of funding through the securitization of their assets. This vehicle provides clients with access to financing in the asset-backed commercial paper ("ABCP") markets by allowing them to either sell their assets directly into the vehicle or indirectly by selling an interest in the securitized assets into the vehicle, which then issues ABCP to investors in order to fund the purchases. We do not sell assets to the customer securitization vehicle. We earn fees for providing services related to the securitizations, including liquidity, distribution and financial arrangement fees for supporting the ongoing operations of the vehicle. We have determined that we control and therefore consolidate this vehicle, as we are exposed to its variable returns and we have the key decision-making powers necessary to affect the amount of those returns in our capacity as liquidity provider and servicing agent.

We provide committed liquidity support facilities to this vehicle which may require that we provide additional financing to the vehicle in the event that certain events occur. The total committed undrawn amount under these facilities at October 31, 2018 was \$7,100 million (\$6,765 million at October 31, 2017).

### Capital and Funding Vehicles

We have a funding vehicle that was created to guarantee payments due to bondholders on bonds issued by us. We sell assets to this funding vehicle in exchange for an intercompany loan.

We may also use capital vehicles to transfer our credit exposure on certain loan assets. We purchase credit protection against eligible credit events from these vehicles. The vehicles collateralize their obligation through the issuance of guarantee-linked notes. Loan assets are not sold or assigned to the vehicles and remain on our Consolidated Balance Sheet. As at October 31, 2018, \$325 million of guarantee-linked notes issued by these vehicles were included in deposits in our Consolidated Balance Sheet (\$318 million at October 31, 2017).

For those vehicles that purchase assets from us or are designed to pass on our credit risk, we have determined that based on the rights of the arrangements or through our equity interest we have significant exposure to the variable returns of the vehicles, and we control and therefore consolidate these vehicles. Additional information related to notes issued by and assets sold to these vehicles is provided in Note 13 and Note 24, respectively.

### Unconsolidated Structured Entities

The table below presents amounts related to our interests in unconsolidated SEs:

(Canadian \$ in millions)	2018			2017		
	Capital vehicles	Canadian customer securitization vehicles (1)	Structured finance vehicles	Capital vehicles	Canadian customer securitization vehicles (1)	Structured finance vehicles
<b>Interests recorded on the balance sheet</b>						
Cash and cash equivalents	118	53	-	8	50	-
Trading securities	-	12	-	-	6	209
FVTPL securities	-	582	-	na	na	na
FVOCI securities	2	242	-	na	na	na
Available-for-sale securities	na	na	na	2	725	-
Loans	7	-	-	7	-	-
Other	3	13	-	-	6	-
	<b>130</b>	<b>902</b>	<b>-</b>	<b>17</b>	<b>787</b>	<b>209</b>
Deposits	570	53	-	460	50	146
Derivatives	-	-	-	-	-	63
Other	17	-	-	16	-	-
	<b>587</b>	<b>53</b>	<b>-</b>	<b>476</b>	<b>50</b>	<b>209</b>
<b>Exposure to loss (2)</b>	<b>28</b>	<b>7,135</b>	<b>-</b>	<b>57</b>	<b>6,425</b>	<b>209</b>
<b>Total assets of the entities</b>	<b>587</b>	<b>5,033</b>	<b>-</b>	<b>476</b>	<b>4,592</b>	<b>209</b>

(1) Securities held that are issued by our Canadian customer securitization vehicles are comprised of asset-backed commercial paper and are classified as trading securities, FVTPL securities and FVOCI securities (trading securities and available-for-sale securities in 2017 under IAS 39). All assets held by these vehicles relate to assets in Canada.

(2) Exposure to loss represents securities held, undrawn liquidity facilities, total committed amounts of the BMO funded vehicle, derivative assets and loans.  
na - not applicable due to IFRS 9 adoption.

### Capital Vehicles

One of our capital vehicles holds a note issued by us as its underlying asset. We intend to redeem the note on December 31, 2018. We may also use capital vehicles to pass our credit risk to security holders of the vehicles. In these situations we are not exposed to significant default or credit risk. Our remaining exposure to variable returns is less than that of the note holders in these vehicles, who are exposed to our default and credit risk. We are not required to consolidate these vehicles.

### Canadian Customer Securitization Vehicles

We sponsor customer securitization vehicles (also referred to as bank-sponsored multi-seller conduits) that provide our customers with alternate sources of funding through the securitization of their assets. These vehicles provide clients with access to financing either from BMO or in the ABCP markets by allowing them to either sell their assets directly into the vehicle or indirectly by selling an interest in the securitized assets into the vehicle, which then issues ABCP to either investors or BMO to fund the purchases. We do not sell assets to the customer securitization vehicles. We earn fees for providing services related to the securitizations, including liquidity, distribution and financial arrangement fees for supporting the ongoing operations of the vehicles. We have determined that we do not control these entities, as their key relevant activity, the servicing of program assets, does not reside with us.

We provide liquidity facilities to the market-funded vehicles which may require that we provide additional financing to the vehicles in the event that certain events occur. The total committed and undrawn amount under these liquidity facilities and any undrawn amounts of the BMO funded vehicle at October 31, 2018 was \$6,286 million (\$5,688 million at October 31, 2017).

### Structured Finance Vehicles

We facilitate development of investment products by third parties, including mutual funds, unit investment trusts and other investment funds that are sold to retail investors. We enter into derivative contracts with these third parties to provide investors with their desired exposure, and we hedge our exposure related to these derivative contracts by investing in other funds through SEs. We are not required to consolidate these vehicles.

During 2018, we discontinued these vehicles and we no longer enter into these types of arrangements with third parties.

### BMO Managed Funds

We have established a number of funds that we also manage. We assess whether or not we control these funds based on the economic interest we have in the funds, including investments in the funds and management fees earned from the funds, and any investors' rights to remove us as

investment manager. Based on our assessment, we have determined that we do not control these funds. Our total interest in unconsolidated BMO managed funds was \$1,612 million at October 31, 2018 (\$1,750 million in 2017), which is included in securities in our Consolidated Balance Sheet.

### Other Structured Entities

We purchase and hold investments in a variety of third-party structured entities, including exchange-traded funds, mutual funds, limited partnerships and investment trusts. We are considered to have an interest in these investments through our holdings and because we may act as a counterparty in certain derivatives contracts. We are not the investment manager or the sponsor of any of these investments. We are generally a passive investor and do not have power over the key decision-making activities of these investments. Our maximum exposure to loss from our investments is limited to the carrying amounts of our investments and any unutilized commitment we have provided.

### Sponsored Structured Entities

We may be deemed to be the sponsor of an SE if we are involved in the design, legal set-up or marketing of the SE. We may also be deemed to be the sponsor of an SE if market participants would reasonably associate the entity with us. We do not have an interest in certain SEs that we have sponsored.

Additional information on our compensation trusts is provided in Note 20.

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## Note 8: Derivative Instruments

Derivative instruments are financial contracts that derive their value from underlying changes in interest rates, foreign exchange rates or other financial or commodity prices or indices.

Derivative instruments are either regulated exchange-traded contracts or negotiated over-the-counter contracts. We use these instruments for trading purposes, as well as to manage our exposures, mainly to foreign currency and interest rate fluctuations, as part of our asset/liability management program.

### Types of Derivatives

#### Swaps

Swaps are contractual agreements between two parties to exchange a series of cash flows. The various swap agreements that we enter into are as follows:

Interest rate swaps – counterparties generally exchange fixed and floating rate interest payments based on a notional value in a single currency.

Cross-currency swaps – fixed rate interest payments and principal amounts are exchanged in different currencies.

Cross-currency interest rate swaps – fixed and/or floating rate interest payments and principal amounts are exchanged in different currencies.

Commodity swaps – counterparties generally exchange fixed and floating rate payments based on a notional value of a single commodity.

Equity swaps – counterparties exchange the return on an equity security or a group of equity securities for the return based on a fixed or floating interest rate or the return on another equity security or group of equity securities.

Credit default swaps – one counterparty pays the other a fee in exchange for that other counterparty agreeing to make a payment if a credit event occurs, such as bankruptcy or failure to pay.

Total return swaps – one counterparty agrees to pay or receive from the other cash amounts based on changes in the value of a reference asset or group of assets, including any returns such as interest earned on these assets, in exchange for amounts that are based on prevailing market funding rates.

#### Forwards and Futures

Forwards and futures are contractual agreements to either buy or sell a specified amount of a currency, commodity, interest-rate-sensitive financial instrument or security at a specified price and date in the future.

Forwards are customized contracts transacted in the over-the-counter market. Futures are transacted in standardized amounts on regulated exchanges and are subject to daily cash margining.

#### Options

Options are contractual agreements that convey to the purchaser the right but not the obligation to either buy or sell a specified amount of a currency, commodity, interest-rate-sensitive financial instrument or security at a fixed future date or at any time within a fixed future period.

For options written by us, we receive a premium from the purchaser for accepting market risk.

For options purchased by us, we pay a premium for the right to exercise the option. Since we have no obligation to exercise the option, our primary exposure to risk is the potential credit risk if the writer of an over-the-counter contract fails to meet the terms of the contract.

Caps, collars and floors are specialized types of written and purchased options. They are contractual agreements in which the writer agrees to pay the purchaser, based on a specified notional amount, the difference between the market rate and the prescribed rate of the cap, collar or floor. The writer receives a premium for selling this instrument.

A swaption is an option granting its owner the right but not the obligation to enter into an underlying swap.

A future option is an option contract in which the underlying instrument is a single futures contract.

The main risks associated with these derivative instruments are related to exposure to movements in interest rates, foreign exchange rates, credit quality, value of the underlying financial instrument or commodity, as applicable, and the possible inability of counterparties to meet the terms of the contracts.

### Embedded Derivatives

From time to time, we purchase or issue financial instruments containing embedded derivatives. The embedded derivative in financial liabilities is separated from the host contract and carried at fair value if the economic characteristics of the derivative are not closely related to those of the host contract, the terms of the embedded derivative are the same as those of a stand-alone derivative, and the combined contract is not measured at fair



value. To the extent that we cannot reliably identify and measure the embedded derivative, the entire contract is carried at fair value, with changes in fair value reflected in income. Embedded derivatives in certain of our equity linked notes are accounted for separately from the host instrument.

### Contingent Features

Certain over-the-counter derivative instruments contain provisions that link the amount of collateral we are required to post or pay to our credit ratings (as determined by the major credit rating agencies). If our credit ratings were to be downgraded, certain counterparties to these derivative instruments could demand immediate and ongoing collateralization on derivative liability positions or request immediate payment. The aggregate fair value of all derivative instruments with collateral posting requirements that were in a liability position on October 31, 2018 was \$2,860 million (\$3,866 million in 2017), for which we have posted collateral of \$2,963 million (\$4,223 million in 2017).

### Risks Hedged

#### *Interest Rate Risk*

We manage interest rate risk through interest rate futures, interest rate swaps and options, which are linked to and adjust the interest rate sensitivity of a specific asset, liability, forecasted transaction or firm commitment, or a specific pool of transactions with similar risk characteristics.

#### *Foreign Currency Risk*

We manage foreign currency risk through currency futures, foreign currency options, cross-currency swaps, foreign exchange spot transactions, forward contracts and deposits denominated in foreign currencies.

#### *Equity Price Risk*

We manage equity price risk through total return swaps.

### Trading Derivatives

Trading derivatives include derivatives entered into with customers to accommodate their risk management needs, market-making to facilitate customer-driven demand for derivatives, derivatives transacted on a limited basis to generate trading income from our principal trading positions and certain derivatives that are executed as part of our risk management strategy that do not qualify as hedges for accounting purposes (“economic hedges”).

We structure and market derivative products to enable customers to transfer, modify or reduce current or expected risks.

Principal trading activities include market-making and positioning activities. Market-making involves quoting bid and offer prices to other market participants with the intention of generating revenues based on spread and volume. Positioning activities involve managing market risk positions with the expectation of profiting from favourable movements in prices, rates or indices.

Trading derivatives are recorded at fair value. Realized and unrealized gains and losses are recorded in trading revenues in our Consolidated Statement of Income. Unrealized gains on trading derivatives are recorded as derivative instrument assets and unrealized losses are recorded as derivative instrument liabilities in our Consolidated Balance Sheet.

We may also economically hedge a portion of our U.S. dollar earnings through forward foreign exchange contracts and/or options to minimize fluctuations in our consolidated net income due to the translation of our U.S. dollar earnings. These contracts are recorded at fair value, with changes in fair value recorded in non-interest revenue, trading revenues, in our Consolidated Statement of Income.

## Fair Value of Trading and Hedging Derivatives

Fair value represents point-in-time estimates that may change in subsequent reporting periods due to market conditions or other factors. A discussion of the fair value measurement of derivatives is included in Note 17.

Fair values of our derivative instruments are as follows:

(Canadian \$ in millions)	2018			2017		
	Gross assets	Gross liabilities	Net	Gross assets	Gross liabilities	Net
<b>Trading</b>						
<b>Interest Rate Contracts</b>						
Swaps	7,795	(6,419)	1,376	8,390	(7,027)	1,363
Forward rate agreements	36	(10)	26	41	-	41
Futures	2	(3)	(1)	-	-	-
Purchased options	425	-	425	444	-	444
Written options	-	(273)	(273)	-	(329)	(329)
<b>Foreign Exchange Contracts</b>						
Cross-currency swaps	2,362	(1,678)	684	2,687	(1,752)	935
Cross-currency interest rate swaps	4,977	(6,057)	(1,080)	8,103	(9,051)	(948)
Forward foreign exchange contracts	4,335	(2,817)	1,518	4,954	(3,178)	1,776
Purchased options	241	-	241	267	-	267
Written options	-	(228)	(228)	-	(270)	(270)
<b>Commodity Contracts</b>						
Swaps	1,559	(1,084)	475	726	(717)	9
Futures	17	-	17	-	-	-
Purchased options	484	-	484	352	-	352
Written options	-	(372)	(372)	-	(357)	(357)
<b>Equity Contracts</b>						
Credit Default Swaps	2,158	(2,402)	(244)	1,388	(3,386)	(1,998)
Purchased	1	(36)	(35)	-	(54)	(54)
Written	9	(1)	8	7	(1)	6
Total fair value - trading derivatives	24,401	(21,380)	3,021	27,359	(26,122)	1,237
<b>Hedging</b>						
<b>Interest Rate Contracts</b>						
Cash flow hedges - swaps	18	(1,261)	(1,243)	78	(558)	(480)
Fair value hedges - swaps	701	(668)	33	274	(402)	(128)
Total swaps	719	(1,929)	(1,210)	352	(960)	(608)
<b>Foreign Exchange Contracts</b>						
Cash flow hedges	1,084	(1,074)	10	1,202	(722)	480
Total foreign exchange contracts	1,084	(1,074)	10	1,202	(722)	480
<b>Equity Contracts</b>						
Cash flow hedges	-	(28)	(28)	38	-	38
Total equity contracts	-	(28)	(28)	38	-	38
Total fair value - hedging derivatives (1)	1,803	(3,031)	(1,228)	1,592	(1,682)	(90)
Total fair value - trading and hedging derivatives	26,204	(24,411)	1,793	28,951	(27,804)	1,147
Less: impact of master netting agreements	(15,575)	15,575	-	(19,909)	19,909	-
Total	10,629	(8,836)	1,793	9,042	(7,895)	1,147

(1) The fair values of hedging derivatives wholly or partially offset the changes in fair values of the related on-balance sheet financial instruments.

Assets are shown net of liabilities to customers where we have a legally enforceable right to offset amounts and we intend to settle contracts on a net basis.

## Notional Amounts of Trading Derivatives

The notional amounts of our derivatives represent the amount to which a rate or price is applied in order to calculate the amount of cash that must be exchanged under the contract. Notional amounts do not represent assets or liabilities and therefore are not recorded in our Consolidated Balance Sheet.

(Canadian \$ in millions)	2018			2017		
	Exchange traded	Over-the-counter	Total	Exchange traded	Over-the-counter	Total
<b>Interest Rate Contracts</b>						
Swaps	-	3,684,763	3,684,763	-	3,073,490	3,073,490
Forward rate agreements	-	411,573	411,573	-	195,142	195,142
Purchased options	26,629	35,023	61,652	10,407	29,107	39,514
Written options	16,511	48,721	65,232	9,284	37,247	46,531
Futures	192,482	-	192,482	89,053	-	89,053
<b>Total interest rate contracts</b>	<b>235,622</b>	<b>4,180,080</b>	<b>4,415,702</b>	<b>108,744</b>	<b>3,334,986</b>	<b>3,443,730</b>
<b>Foreign Exchange Contracts</b>						
Cross-currency swaps	-	57,226	57,226	-	50,534	50,534
Cross-currency interest rate swaps	-	449,187	449,187	-	430,808	430,808
Forward foreign exchange contracts	-	463,743	463,743	-	392,924	392,924
Purchased options	2,625	21,468	24,093	6,001	23,812	29,813
Written options	1,420	24,018	25,438	1,249	29,101	30,350
Futures	739	-	739	794	-	794
<b>Total foreign exchange contracts</b>	<b>4,784</b>	<b>1,015,642</b>	<b>1,020,426</b>	<b>8,044</b>	<b>927,179</b>	<b>935,223</b>
<b>Commodity Contracts</b>						
Swaps	-	24,366	24,366	-	18,713	18,713
Purchased options	3,303	6,182	9,485	5,031	7,080	12,111
Written options	4,909	4,233	9,142	6,896	4,905	11,801
Futures	33,104	-	33,104	28,139	-	28,139
<b>Total commodity contracts</b>	<b>41,316</b>	<b>34,781</b>	<b>76,097</b>	<b>40,066</b>	<b>30,698</b>	<b>70,764</b>
<b>Equity Contracts</b>	<b>33,687</b>	<b>52,725</b>	<b>86,412</b>	<b>14,253</b>	<b>63,184</b>	<b>77,437</b>
<b>Credit Default Swaps</b>						
Purchased	-	3,047	3,047	-	2,658	2,658
Written	-	443	443	-	448	448
<b>Total</b>	<b>315,409</b>	<b>5,286,718</b>	<b>5,602,127</b>	<b>171,107</b>	<b>4,359,153</b>	<b>4,530,260</b>

## Derivatives Used in Hedge Accounting

In accordance with our risk management strategy, we enter into various derivative contracts to hedge our interest rate, foreign currency and equity price exposures. In addition, we use deposits to hedge foreign currency exposure in our net investment in foreign operations. To the extent these instruments qualify for hedge accounting, we designate them in accounting hedge relationships. Our structural market risk strategies, including our approach to managing interest rate and foreign exchange risk, are included in the blue-tinted font in the Structural (Non-Trading) Market Risk section of Management's Discussion and Analysis on page 98 of this report. In addition, our exposure to foreign exchange rate risk is discussed in the Foreign Exchange Risk section of Management's Discussion and Analysis on page 99. Our exposure to equity price risk and our approach to managing it are discussed in the "other share-based compensation, mid-term incentive plans" section of Note 20.

By using derivatives to hedge exposures to interest rates, foreign currency exchange rates, and equity prices, we are also exposed to the credit risk of the derivative counterparty. We mitigate credit risk by entering into transactions with high-quality counterparties, requiring the counterparties to post collateral, entering into master netting agreements, or settling through centrally cleared counterparties.

In order to qualify as an accounting hedge, the hedging relationship must be designated and formally documented at its inception, detailing the particular risk management objective and strategy for the hedge and the specific asset, liability or cash flow being hedged, as well as how effectiveness is being assessed. Changes in the fair value of the derivative must be highly effective in offsetting changes in the fair value or changes in the amount of future cash flows of the hedged item. We evaluate hedge effectiveness at the inception of the hedging relationship and on an ongoing basis, retrospectively and prospectively, primarily using a quantitative statistical regression analysis. We consider a hedging relationship highly effective when all of the following criteria are met: correlation between the variables in the regression is at least 0.8; the slope of the regression is within a 0.8 to 1.25 range; and the confidence level of the slope is at least 95%. The practice is different for our net investment hedge, discussed in the Net Investment Hedges section below.

Any ineffectiveness in the hedging relationship is recognized as it arises in non-interest revenue, other, in our Consolidated Statement of Income.

The following table outlines the notional amounts and average rates of derivatives and the carrying amount of deposits designated as hedging instruments, by term to maturity, hedge type, and risk type, where applicable.

(Canadian \$ in millions, except as noted)

2018

	Remaining term to maturity					Total	
	Within 1 year	1 to 3 years	3 to 5 years	5 to 10 years	Over 10 years		
<b>Cash Flow Hedges</b>							
<b>Interest rate risk – Interest rate swaps</b>							
Notional amount	5,252	22,976	30,790	14,751	-	73,769	
Average fixed interest rate	1.66%	1.67%	2.60%	2.42%	-	2.21%	
<b>Foreign exchange risk – Cross-currency swaps and foreign exchange forwards (1)</b>							
CAD-USD pair	Notional amount	3,939	10,572	11,781	2,576	251	29,119
	Average fixed interest rate	1.31%	1.20%	2.01%	1.27%	3.02%	1.57%
	Average exchange rate: CAD-USD	1.3347	1.3035	1.2923	1.1871	1.3122	1.2930
CAD-EUR pair	Notional amount	3,804	8,726	8,618	-	201	21,349
	Average fixed interest rate	1.74%	2.10%	2.26%	-	2.97%	2.11%
	Average exchange rate: CAD-EUR	1.5217	1.4685	1.4999	-	1.4870	1.4908
Other currency pairs (2)	Notional amount	-	1,817	4,427	109	-	6,353
	Average fixed interest rate	-	2.05%	2.80%	2.98%	-	2.59%
	Average exchange rate: CAD-Non USD/EUR	-	1.4361	1.3338	0.1696 (3)	-	1.3430
<b>Equity price risk – Total return swap</b>							
Notional amount	381	-	-	-	-	381	
<b>Fair Value Hedges</b>							
<b>Interest rate risk – Interest rate swaps</b>							
Notional amount	14,516	21,919	22,928	14,101	-	73,464	
Average fixed interest rate	1.81%	2.16%	2.29%	2.36%	-	2.17%	
<b>Net Investment Hedges</b>							
<b>Foreign exchange risk</b>							
USD denominated deposit – carrying amount	6,596	-	-	-	-	6,596	
GBP denominated deposit – carrying amount	473	-	-	-	-	473	

(1) Under certain hedge strategies using cross-currency swaps, a CAD leg is inserted to create two swaps designated as separate hedges (for example, a EURO-USD cross-currency swap split into EURO-CAD and CAD-USD cross-currency swaps). The relevant notional amount is grossed up in this table as the cross-currency swaps are disclosed by CAD-foreign currency pair.

(2) Includes CAD-AUD, CAD-CHF, CAD-CNH, CAD-GBP or CAD-HKD cross-currency swaps where applicable.

(3) Includes one CAD-HKD cross-currency swap.

### Cash Flow Hedges

Cash flow hedges modify exposure to variability in cash flows for variable interest rate bearing instruments, foreign currency denominated assets and liabilities and certain cash-settled share-based payment grants subject to equity price risk. We use interest rate swaps with or without embedded options, cross-currency swaps, and total return swaps to hedge this variability. We hedge the full amount of foreign exchange risk, but interest rate risk is hedged only to the extent of benchmark interest rates. The benchmark interest rate is a component of interest rate risk that is observable in the relevant financial markets, for example London Interbank Offered Rate (“LIBOR”) or Bankers’ Acceptances (“BA”) rate.

We determine the amount of the exposure to which hedge accounting is applied by assessing the potential impact of changes in interest rates, foreign exchange rates, and equity prices on the future cash flows of floating rate loans and deposits, foreign currency denominated assets and liabilities and certain cash-settled share-based payments. This assessment is performed using analytical techniques, such as simulation, sensitivity analysis, stress testing and gap analysis.

We record interest that we pay or receive on these cash flow hedge derivatives as an adjustment to net interest income in our Consolidated Statement of Income over the life of the hedge.

To the extent that changes in the fair value of the derivative offset changes in the fair value of the hedged item for the designated hedged risk, they are recorded in other comprehensive income. Hedge ineffectiveness, the portion of the change in fair value of the derivative that does not offset changes in the fair value of the hedged item, is recorded directly in non-interest revenue, other, in our Consolidated Statement of Income as it arises.

For cash flow hedges that are discontinued before the end of the original hedge term, the cumulative unrealized gain or loss recorded in other comprehensive income is amortized to our Consolidated Statement of Income in net interest income for interest rate swaps and in employee compensation for total return swaps as the hedged item is recorded in earnings. The entire unrealized gain or loss is recognized immediately in net interest income in our Consolidated Statement of Income, if the hedged item is sold or settled. We do not terminate our foreign exchange hedges before maturity.

Under cash flow hedges, we use a hypothetical derivative to measure the hedged risk of floating rate loans, deposits, foreign currency denominated assets and liabilities, or share-based payment grants. This hypothetical derivative matches the critical terms of the hedged items identically, and it perfectly offsets the hedged cash flow.

In our cash flow hedge relationships, the main sources of ineffectiveness are differences in interest rate indices, tenor and reset/settlement frequencies between the hedging instrument and the hedged item.

### Net Investment Hedges

Net investment hedges mitigate our exposure to foreign currency exchange rate fluctuations related to our net investment in foreign operations.

Deposits denominated in foreign currencies are designated as a hedging instrument for a portion of the net investment in foreign operations. The foreign currency translation of our net investment in foreign operations and the effective portion of the corresponding hedging instrument are recorded in unrealized gains (losses) on translation of net foreign operations in other comprehensive income.

Effectiveness of our net investment hedge is determined by using the dollar offset method with spot foreign currency rates. As the notional amount of the deposits and the hedged net investment in foreign operations are the same, there is no source of ineffectiveness in these hedging relationships.

For cash flow hedges and net investment hedges, the following table contains information related to items designated as hedging instruments, hedged items and hedge ineffectiveness for the year ended October 31, 2018.

(Canadian \$ in millions)	Carrying amount of hedging instruments (1)		Hedge ineffectiveness		
	Asset	Liability	Gains (Losses) on hedging derivatives used to calculate hedge ineffectiveness	Gains (Losses) on hypothetical derivatives used to calculate hedge ineffectiveness	Ineffectiveness recorded in non-interest revenue - other
<b>Cash flow hedges</b>					
Interest rate risk - Interest rate swaps	18	(1,261)	(1,685)	1,687	(4)
Foreign exchange risk - Cross-currency swaps and foreign exchange forwards	1,084	(1,074)	(459)	459	-
Equity price risk - Total return swaps	-	(28)	24	(24)	-
	<b>1,102</b>	<b>(2,363)</b>	<b>(2,120)</b>	<b>2,122</b>	<b>(4)</b>
<b>Net investment hedges</b>					
Foreign exchange risk - Deposit liabilities		(7,069)	(211)	211	-
<b>Total</b>	<b>1,102</b>	<b>(9,432)</b>	<b>(2,331)</b>	<b>2,333</b>	<b>(4)</b>

(1) Represents the unrealized gains (losses) within derivative financial instruments in assets and liabilities, respectively, in the Consolidated Balance Sheet.

For cash flow hedges and net investment hedges, the following table contains information related to impacts on the Consolidated Statement of Other Comprehensive Income, on a pre-tax basis for the year ended October 31, 2018.

(Canadian \$ in millions)	AOCI as at November 1, 2017	Gains / (losses) recognized in OCI	Amount reclassified to net income as the hedged item affects net income	Balance in cash flow hedge AOCI / net foreign operations AOCI		
				AOCI as at October 31, 2018	Active hedges	Discontinued hedges
<b>Cash flow hedges</b>						
Interest rate risk	(597)	(1,681)	67	(2,211)	(1,348)	(863)
Foreign exchange risk	298	(3)	456	751	751	-
Equity price risk	72	24	(66)	30	30	-
	(227)	(1,660)	457	(1,430) (1)	(567)	(863)
<b>Net investment hedges</b>						
Foreign exchange risk	(1,580)	(211)	-	(1,791)	(1,791)	-
<b>Total</b>	<b>(1,807)</b>	<b>(1,871)</b>	<b>457</b>	<b>(3,221)</b>	<b>(2,358)</b>	<b>(863)</b>

(1) Tax balance related to cash flow hedge AOCI is \$356 million as at October 31, 2018.

### Fair Value Hedges

Fair value hedges modify exposure to changes in a fixed rate instrument's fair value caused by changes in interest rates. These hedges economically convert fixed rate assets and liabilities to floating rate. We use interest rate swaps to hedge interest rate risk, including benchmark interest rates, inherent in fixed rate securities, a portfolio of mortgages, deposits and subordinated debt.

Any fixed rate assets or liabilities that are part of a hedging relationship are adjusted for the change in value of the risk being hedged. To the extent that the change in the fair value of the derivative does not offset changes in the fair value of the hedged item for the risk being hedged, the net amount (hedge ineffectiveness) is recorded directly in non-interest revenue, other, in our Consolidated Statement of Income.

For fair value hedges that are discontinued, we cease adjusting the hedged item. The cumulative fair value adjustment of the hedged item is then amortized to net interest income over the hedged item's remaining term to maturity. If the hedged item is sold or settled, the cumulative fair value adjustment is included in the gain or loss on sale or settlement.

In our fair value hedge relationships, the main sources of ineffectiveness are the counterparty effect and our own credit risk on the fair value of the swap, and the difference in terms such as fixed interest rate or reset/settlement frequency between the swap and the hedged item.

The amounts relating to derivatives designated as fair value hedging instruments, hedged items and hedge ineffectiveness for the year are as follows:

(Canadian \$ in millions)	Carrying amount of hedging derivatives (1)		Hedge ineffectiveness			Accumulated amount of fair value hedge gains (losses) on hedged items		
	Asset	Liability	Gains (Losses) on hedging derivatives used to calculate hedge ineffectiveness	Gains (Losses) on hedged item used to calculate hedge ineffectiveness	Ineffectiveness recorded in non-interest revenue - other	Carrying amount of the hedged item (2)	Active hedges	Discontinued hedges
<b>Fair value hedge</b>								
Interest rate swaps	701	(668)						
FVOCI securities and loans	-	-	850	(843)	7	36,722	(1,160)	-
Deposits and subordinated debt	-	-	(764)	761	(3)	(34,375)	719	436
<b>Total</b>	<b>701</b>	<b>(668)</b>	<b>86</b>	<b>(82)</b>	<b>4</b>	<b>2,347</b>	<b>(441)</b>	<b>436</b>

(1) Represents the unrealized gains (losses) within derivative financial instruments in assets and liabilities, respectively, in the Consolidated Balance Sheet.

(2) Represents the carrying value on the Consolidated Balance Sheet and includes amortized cost, before allowance for credit losses, plus fair value hedge adjustments, except for FVOCI securities that are carried at fair value.

### *Comparative Information*

During 2017, net losses of \$1,161 million related to the effective portion of cash flow hedges were recognized in OCI. A gain of \$188 million related to cash flow hedges was transferred from equity to income in interest income or interest expense. Net ineffectiveness recognized on cash flow hedges during 2017 was a loss of \$7 million.

Included within non-interest revenue, other, is a fair value loss of \$200 million on derivatives held in qualifying fair value hedging relationships, and a gain of \$193 million representing net increases in the fair value of the hedged item attributable to the hedged risk.

### **Derivative-Related Market Risk**

Derivative instruments are subject to market risk. Market risk arises from the potential for a negative impact on the balance sheet and/or statement of income due to adverse changes in the value of derivative instruments as a result of changes in certain market variables. These variables include interest rates, foreign exchange rates, equity and commodity prices and their implied volatilities, as well as credit spreads, credit migration and default. We strive to limit market risk by employing comprehensive governance and management processes for all market risk-taking activities.

### **Derivative-Related Credit Risk**

Over-the-counter derivative instruments are subject to credit risk arising from the possibility that counterparties may default on their obligations. The credit risk associated with a derivative is normally a small fraction of the notional amount of the derivative instrument. Derivative contracts generally expose us to potential credit loss if changes in market rates affect the counterparty's position unfavourably and the counterparty defaults on payment. The credit risk is represented by the positive fair value of the derivative instrument. We strive to limit credit risk by dealing with counterparties that we believe are creditworthy, and we manage our credit risk for derivatives using the same credit risk process that is applied to loans and other credit assets.

We also pursue opportunities to reduce our exposure to credit losses on derivative instruments, including through collateral and by entering into master netting agreements with counterparties. The credit risk associated with favourable contracts is mitigated by legally enforceable master netting agreements to the extent that unfavourable contracts with the same counterparty must be settled concurrently with favourable contracts.

Exchange-traded derivatives have limited potential for credit exposure, as they are settled net daily with each exchange.

Terms used in the credit risk table below are as follows:

**Replacement cost** represents the cost of replacing all contracts that have a positive fair value, determined using current market rates. It represents in effect the unrealized gains on our derivative instruments. Replacement costs disclosed below represent the net of the asset and liability to a specific counterparty where we have a legally enforceable right to offset the amount owed to us with the amount owed by us and we intend either to settle on a net basis or to realize the asset and settle the liability simultaneously.

**Credit risk equivalent** represents the total replacement cost plus an amount representing the potential future credit exposure, as outlined in OSFI's Capital Adequacy Guideline.

**Risk-weighted assets** represent the credit risk equivalent, weighted on the basis of the creditworthiness of the counterparty, and considering collateral, netting and other credit risk mitigants, as prescribed by OSFI.



(Canadian \$ in millions)	2018			2017		
	Replacement cost	Credit risk equivalent	Risk-weighted assets	Replacement cost	Credit risk equivalent	Risk-weighted assets
<b>Interest Rate Contracts</b>						
Swaps	8,514	10,699	-	8,742	11,603	-
Forward rate agreements	36	34	-	41	42	-
Purchased options	409	393	-	440	381	-
Total interest rate contracts	8,959	11,126	704	9,223	12,026	1,537
<b>Foreign Exchange Contracts</b>						
Cross-currency swaps	3,270	7,832	-	3,727	8,345	-
Cross-currency interest rate swaps	5,035	14,909	-	8,157	17,210	-
Forward foreign exchange contracts	4,453	8,373	-	5,062	8,389	-
Purchased options	225	424	-	250	420	-
Total foreign exchange contracts	12,983	31,538	2,544	17,196	34,364	2,701
<b>Commodity Contracts</b>						
Swaps	1,559	4,450	-	726	2,971	-
Purchased options	335	1,108	-	120	1,034	-
Total commodity contracts	1,894	5,558	1,188	846	4,005	971
<b>Equity Contracts</b>						
	1,585	4,332	431	1,322	4,750	461
<b>Credit Default Swaps</b>						
	10	55	83	7	46	27
Total derivatives	25,431	52,609	4,950	28,594	55,191	5,697
Less: impact of master netting agreements	(15,575)	(29,170)	-	(19,909)	(33,025)	-
Total	9,856	23,439	4,950	8,685	22,166	5,697

The total derivatives and the impact of master netting agreements for replacement cost do not include exchange-traded derivatives with a fair value of \$773 million as at October 31, 2018 (\$357 million in 2017).

Transactions are conducted with counterparties in various geographic locations and industry sectors. Set out below is the replacement cost of contracts with customers located in the following countries, based on country of ultimate risk:

(Canadian \$ in millions, except as noted)	Before master netting agreements				After master netting agreements			
	2018		2017		2018		2017	
Canada	13,449	53%	15,447	54%	4,901	50%	5,045	58%
United States	5,446	21%	7,149	25%	2,102	21%	1,940	22%
United Kingdom	1,181	5%	1,079	4%	315	3%	182	2%
Other countries (1)	5,355	21%	4,919	17%	2,538	26%	1,518	18%
Total	25,431	100%	28,594	100%	9,856	100%	8,685	100%

(1) No other country represented 15% or more of our replacement cost in 2018 or 2017.

Transactions are conducted with various counterparties. Set out below is the replacement cost of contracts (before the impact of master netting agreements) with customers in the following industries:

As at October 31, 2018 (Canadian \$ in millions)	Interest rate contracts	Foreign exchange contracts	Commodity contracts	Equity contracts	Credit default swaps	Total
Financial institutions	6,509	10,238	360	1,219	10	18,336
Governments	1,694	1,478	56	-	-	3,228
Natural resources	3	27	432	-	-	462
Energy	93	641	727	-	-	1,461
Other	660	599	319	366	-	1,944
Total	8,959	12,983	1,894	1,585	10	25,431

  

As at October 31, 2017 (Canadian \$ in millions)	Interest rate contracts	Foreign exchange contracts	Commodity contracts	Equity contracts	Credit default swaps	Total
Financial institutions	6,063	13,898	227	1,141	7	21,336
Governments	1,895	1,202	66	-	-	3,163
Natural resources	-	22	74	-	-	96
Energy	155	479	226	-	-	860
Other	1,110	1,595	253	181	-	3,139
Total	9,223	17,196	846	1,322	7	28,594

## Term to Maturity

Our derivative contracts have varying maturity dates. The remaining contractual terms to maturity for the notional amounts of our derivative contracts are set out below:

(Canadian \$ in millions)	Term to maturity					2018	2017
	Within 1 year	1 to 3 years	3 to 5 years	5 to 10 years	Over 10 years	Total notional amounts	Total notional amounts
<b>Interest Rate Contracts</b>							
Swaps	1,404,557	707,683	1,167,568	514,392	37,797	3,831,997	3,202,365
Forward rate agreements, futures and options	608,132	100,756	13,885	7,897	269	730,939	370,240
Total interest rate contracts	2,012,689	808,439	1,181,453	522,289	38,066	4,562,936	3,572,605
<b>Foreign Exchange Contracts</b>							
Cross-currency swaps	12,466	36,718	24,980	15,413	3,339	92,916	85,586
Cross-currency interest rate swaps	118,783	147,231	97,828	72,857	18,533	455,232	434,210
Forward foreign exchange contracts, futures and options	512,002	9,283	1,148	134	26	522,593	463,665
Total foreign exchange contracts	643,251	193,232	123,956	88,404	21,898	1,070,741	983,461
<b>Commodity Contracts</b>							
Swaps	6,234	14,885	2,875	372	-	24,366	18,713
Futures and options	21,910	25,587	3,530	704	-	51,731	52,051
Total commodity contracts	28,144	40,472	6,405	1,076	-	76,097	70,764
<b>Equity Contracts</b>	72,922	7,953	3,873	1,680	366	86,794	77,781
<b>Credit Contracts</b>	746	248	1,262	1,083	151	3,490	3,106
Total notional amount	2,757,752	1,050,344	1,316,949	614,532	60,481	5,800,058	4,707,717

## Note 9: Premises and Equipment

We record all premises and equipment at cost less accumulated amortization, and less any accumulated impairment, except land, which is recorded at cost. Buildings, computer equipment and operating system software, other equipment and leasehold improvements are amortized on a straight-line basis over their estimated useful lives. When the major components of a building have different useful lives, they are accounted for separately and amortized over each component's estimated useful life.

The maximum estimated useful lives we use to amortize our assets are as follows:

Buildings	10 to 40 years
Computer equipment and operating system software	5 years
Other equipment	10 years
Leasehold improvements	Lease term to a maximum of 10 years

Amortization methods, useful lives and the residual values of premises and equipment are reviewed annually for any change in circumstances and are adjusted if appropriate. At each reporting period, we review whether there are any indications that premises and equipment need to be tested for impairment. If there is an indication that an asset may be impaired, we test for impairment by comparing the asset's carrying value to its recoverable amount. The recoverable amount is calculated as the higher of the value in use and the fair value less costs to sell. Value in use is the present value of the future cash flows expected to be derived from the asset. An impairment charge is recorded when the recoverable amount is less than the carrying value. There were no significant write-downs of premises and equipment due to impairment during the years ended October 31, 2018 and 2017. Gains and losses on disposal are included in non-interest expense, premises and equipment, in our Consolidated Statement of Income.

Net rent expense for premises and equipment reported in non-interest expense, premises and equipment, in our Consolidated Statement of Income for the years ended October 31, 2018, 2017 and 2016 was \$530 million, \$501 million and \$502 million, respectively.

						2018						2017
	Land	Buildings	Computer equipment	Other equipment	Leasehold improvements	Total	Land	Buildings	Computer equipment	Other equipment	Leasehold improvements	Total
<b>Cost</b>												
Balance at beginning of year	174	1,726	1,994	913	1,429	6,236	207	1,784	1,844	902	1,347	6,084
Additions	4	66	236	40	87	433	-	72	156	69	105	402
Disposals (1)	(32)	(163)	(11)	(27)	(20)	(253)	(28)	(95)	(13)	(13)	(10)	(159)
Foreign exchange and other	(1)	(2)	10	7	18	32	(5)	(35)	7	(45)	(13)	(91)
Balance at end of year	145	1,627	2,229	933	1,514	6,448	174	1,726	1,994	913	1,429	6,236
<b>Accumulated Depreciation and Impairment</b>												
Balance at beginning of year	-	1,063	1,465	674	1,001	4,203	-	1,055	1,306	649	927	3,937
Disposals (1)	-	(116)	(9)	(24)	(15)	(164)	-	(32)	(11)	(8)	(8)	(59)
Amortization	-	60	201	48	91	400	-	63	185	49	94	391
Foreign exchange and other	-	9	5	6	3	23	-	(23)	(15)	(16)	(12)	(66)
Balance at end of year	-	1,016	1,662	704	1,080	4,462	-	1,063	1,465	674	1,001	4,203
Net carrying value	145	611	567	229	434	1,986	174	663	529	239	428	2,033

(1) Includes fully depreciated assets written off.

## Note 10: Acquisitions

The cost of an acquisition is measured at the fair value of the consideration transferred, including contingent consideration. Acquisition-related costs are recognized as an expense in the period in which they are incurred. The identifiable assets acquired and liabilities assumed and contingent consideration are measured at their fair values at the date of acquisition. Goodwill is measured as the excess of the aggregate of the consideration transferred over the net of the fair value of identifiable assets acquired and liabilities assumed. The results of operations of acquired businesses are included in our consolidated financial statements beginning on the date of acquisition.

### KGS-Alpha Capital Markets ("KGS")

On September 1, 2018, we completed the acquisition of the business of KGS, a U.S. fixed income broker-dealer specializing in U.S. mortgage and asset-backed securities in the institutional investor market, for cash consideration of US\$304 million (CAD\$397 million). The acquisition was accounted for as a business combination, and the acquired business and corresponding goodwill are included in our Capital Markets reporting segment.

As part of this acquisition, we acquired intangible assets of \$49 million and goodwill of \$54 million. The intangible assets are being amortized over three to fourteen years on an accelerated basis. Goodwill of \$32 million related to this acquisition is deductible for tax purposes.

The fair values of the assets acquired and liabilities assumed at the date of acquisition are as follows:

	KGS
Securities – trading	5,193
Securities borrowed or purchased under resale agreements	5,669
Goodwill and intangible assets	103
Other assets	584
Total assets	11,549
Securities lent or sold under repurchase agreements	9,563
Securities sold but not yet purchased	1,431
Other liabilities	158
Purchase price	397

The purchase price allocation for KGS is subject to refinement as we complete the valuation of the assets acquired and liabilities assumed.

## Note 11: Goodwill and Intangible Assets

### Goodwill

When we complete an acquisition, we allocate the purchase price paid to the assets acquired, including identifiable intangible assets, and the liabilities assumed. Any portion of the consideration transferred that is in excess of the fair value of those net assets is considered to be goodwill. Goodwill is not amortized and is instead tested for impairment annually.

In performing the impairment test, we utilize the fair value less costs to sell for each group of CGUs based on discounted cash flow projections. Cash flows were projected for the first 10 years based on actual operating results, expected future business performance and past experience. Beyond 10 years, cash flows were assumed to grow at perpetual annual rates of up to 2% (3% in 2017). The discount rates we applied in determining the recoverable amounts in 2018 ranged from 8.6% to 11.4% (8.3% to 12.2% in 2017), and were based on our estimate of the cost of capital for each CGU. The cost of capital for each CGU was estimated using the Capital Asset Pricing Model, based on the historical betas of publicly traded peer companies that are comparable to the CGU.

There were no write-downs of goodwill due to impairment during the years ended October 31, 2018 and 2017.

The key assumptions described above may change as market and economic conditions change. However, we estimate that reasonably possible changes in these assumptions are not expected to cause recoverable amounts of our CGUs to decline below their carrying amounts.

A continuity of our goodwill by group of CGUs for the years ended October 31, 2018 and 2017 is as follows:

(Canadian \$ in millions)	Personal and Commercial Banking			Wealth Management		BMO	Total	
	Canadian P&C	U.S. P&C	Total	Traditional Wealth Management	Insurance	Capital Markets		
Balance – October 31, 2016	97	3,861	3,958	2,117	2	2,119	304	6,381
Acquisitions (disposals) during the year	-	-	-	(4)	-	(4)	-	(4)
Foreign exchange and other (1)	-	(142)	(142)	24	-	24	(15)	(133)
Balance – October 31, 2017	97	3,719	3,816	2,137	2	2,139	289	6,244
Acquisitions (disposals) during the year	-	-	-	-	-	-	54	54
Foreign exchange and other (1)	-	78	78	(8)	-	(8)	5	75
Balance – October 31, 2018	<b>97</b> (2)	<b>3,797</b> (3)	<b>3,894</b>	<b>2,129</b> (4)	<b>2</b> (5)	<b>2,131</b>	<b>348</b> (6)	<b>6,373</b>

(1) Other changes in goodwill included the effects of translating goodwill denominated in foreign currencies into Canadian dollars and purchase accounting adjustments related to prior-year purchases.

(2) Relates primarily to bcpbank Canada, Diners Club, Aver Media LP and GE Transportation Finance.

(3) Relates primarily to First National Bank & Trust, Ozaukee Bank, Merchants and Manufacturers Bancorporation, Inc., Diners Club, AMCORE, M&I and GE Transportation Finance.

(4) Relates to BMO Nesbitt Burns Inc., Guardian Group of Funds Ltd., Pyrford International plc, LGM Investments Limited, M&I, myCFO, Inc., Stoker Ostler Wealth Advisors, Inc., CTC Consulting LLC, AWMB and F&C Asset Management plc.

(5) Relates to AIG.

(6) Relates to Gerard Klauer Mattison, BMO Nesbitt Burns Inc., Paloma Securities L.L.C., M&I, Greene Holcomb Fisher and KGS.

## Intangible Assets

Intangible assets related to our acquisitions are initially recorded at their fair value at the acquisition date and subsequently at cost less accumulated amortization. Software is recorded at cost less accumulated amortization. Amortization expense is recorded in amortization of intangible assets in our Consolidated Statement of Income. The following table presents the changes in the balance of these intangible assets:

(Canadian \$ in millions)	Customer relationships	Core deposits	Branch distribution networks	Software – amortizing	Software under development	Other	Total
Cost as at October 31, 2016	704	968	194	3,189	476	365	5,896
Additions (disposals)	(33)	-	-	546	(67)	-	446
Foreign exchange and other	(17)	(37)	(7)	(39)	(11)	11	(100)
Cost as at October 31, 2017	654	931	187	3,696	398	376	6,242
Additions (disposals)	35	-	-	422	94	12	563
Foreign exchange and other	(1)	20	4	9	4	(4)	32
Cost as at October 31, 2018	<b>688</b>	<b>951</b>	<b>191</b>	<b>4,127</b>	<b>496</b>	<b>384</b>	<b>6,837</b>

Certain comparative figures have been reclassified to conform with the current year's presentation.

The following table presents the accumulated amortization of our intangible assets:

(Canadian \$ in millions)	Customer relationships	Core deposits	Branch distribution networks	Software – amortizing	Software under development	Other	Total
Accumulated amortization at October 31, 2016	398	735	194	2,329	-	62	3,718
Amortization	68	56	-	336	-	25	485
Disposals	(22)	-	-	(11)	-	-	(33)
Foreign exchange and other	(13)	(29)	(7)	(36)	-	(2)	(87)
Accumulated amortization at October 31, 2017	431	762	187	2,618	-	85	4,083
Amortization	46	51	-	387	-	19	503
Disposals	-	-	-	(20)	-	-	(20)
Foreign exchange and other	(2)	17	4	(15)	-	(5)	(1)
Accumulated amortization at October 31, 2018	<b>475</b>	<b>830</b>	<b>191</b>	<b>2,970</b>	-	<b>99</b>	<b>4,565</b>
Carrying value at October 31, 2018	<b>213</b>	<b>121</b>	<b>-</b>	<b>1,157</b>	<b>496</b>	<b>285</b>	<b>2,272</b>
Carrying value at October 31, 2017	223	169	-	1,078	398	291	2,159

Certain comparative figures have been reclassified to conform with the current year's presentation.

Intangible assets are amortized to income over the period during which we believe the assets will benefit us, on either a straight-line or an accelerated basis, over a period not to exceed 15 years. We have \$165 million as at October 31, 2018 (\$169 million as at October 31, 2017) in intangible assets with indefinite lives that relate primarily to fund management contracts.

The useful lives of intangible assets are reviewed annually for any changes in circumstances. We test definite-life intangible assets for impairment when events or changes in circumstances indicate that their carrying value may not be recoverable. Indefinite-life intangible assets are tested annually for impairment. If any intangible assets are determined to be impaired, we write them down to their recoverable amount, the higher of value in use and fair value less costs to sell, when this is less than the carrying value.

There were write-downs of intangible assets of \$13 million during the year ended October 31, 2018 (\$5 million in 2017).

## Note 12: Other Assets

### Customers' Liability under Acceptances

Acceptances represent a form of negotiable short-term debt that is issued by our customers, which we guarantee for a fee. The fees earned are recorded in lending fees in our Consolidated Statement of Income over the term of the acceptance. The amount potentially due under the acceptances is recorded in other liabilities on our Consolidated Balance Sheet. We record the bank's equivalent claim against our customers in the event of a call on these commitments in other assets on our Consolidated Balance Sheet.

### Other

The components of other within other assets are as follows:

(Canadian \$ in millions)	2018	2017
Accounts receivable, prepaid expenses and other items	6,910	6,508
Accrued interest receivable	1,461	1,079
BMO Transportation Finance – leased vehicles	937	928
Cash collateral	2,019	3,165
Due from clients, dealers and brokers	236	156
Insurance-related assets	822	644
Pension asset (Note 21)	664	508
Precious metals	1,603	582
<b>Total</b>	<b>14,652</b>	<b>13,570</b>

Certain comparative figures have been reclassified to conform with the current year's presentation.

## Note 13: Deposits

(Canadian \$ in millions)	Payable on demand				Payable after notice		Payable on a fixed date		Total	
	Interest bearing		Non-interest bearing		2018	2017	2018	2017	2018	2017
Deposits by:										
Banks (1)	1,450	818	1,400	1,864	526	586	24,531	24,937	27,907	28,205
Business and government	25,266	20,621	33,984	33,968	67,026	61,790	187,024	166,897	313,300	283,276
Individuals	3,476	3,278	21,345	20,044	90,233	89,859	65,790	55,130	180,844	168,311
<b>Total (2)(3)</b>	<b>30,192</b>	<b>24,717</b>	<b>56,729</b>	<b>55,876</b>	<b>157,785</b>	<b>152,235</b>	<b>277,345</b>	<b>246,964</b>	<b>522,051</b>	<b>479,792</b>
Booked in:										
Canada	21,735	21,557	47,231	44,380	82,091	81,590	161,192	145,648	312,249	293,175
United States	7,395	2,259	9,477	11,496	74,476	69,555	86,805	75,517	178,153	158,827
Other countries	1,062	901	21	–	1,218	1,090	29,348	25,799	31,649	27,790
<b>Total</b>	<b>30,192</b>	<b>24,717</b>	<b>56,729</b>	<b>55,876</b>	<b>157,785</b>	<b>152,235</b>	<b>277,345</b>	<b>246,964</b>	<b>522,051</b>	<b>479,792</b>

(1) Includes regulated and central banks.

(2) Includes structured notes designated at fair value through profit or loss.

(3) As at October 31, 2018 and 2017, total deposits payable on a fixed date included \$29,673 million and \$30,419 million, respectively, of federal funds purchased, commercial paper issued and other deposit liabilities. Included in deposits as at October 31, 2018 and 2017 are \$259,747 million and \$237,127 million, respectively, of deposits denominated in U.S. dollars, and \$37,427 million and \$27,686 million, respectively, of deposits denominated in other foreign currencies.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Deposits payable on demand are comprised primarily of our customers' chequing accounts, some of which we pay interest on. Our customers need not notify us prior to withdrawing money from their chequing accounts.

Deposits payable after notice are comprised primarily of our customers' savings accounts, on which we pay interest. Deposits payable on a fixed date are comprised of:

- Various investment instruments purchased by our customers to earn interest over a fixed period, such as term deposits and guaranteed investment certificates. The terms of these deposits can vary from one day to 10 years.
- Federal funds purchased, which are overnight borrowings of other banks' excess reserve funds at the United States Federal Reserve Bank. As at October 31, 2018, we had borrowed \$55 million of federal funds (\$707 million in 2017).
- Commercial paper, which totalled \$9,121 million as at October 31, 2018 (\$8,430 million in 2017).
- Covered bonds, which totalled \$25,045 million as at October 31, 2018 (\$23,108 million in 2017).

The following table presents the maturity schedule for our deposits payable on a fixed date:

(Canadian \$ in millions)	2018	2017
Within 1 year	162,666	145,039
1 to 2 years	34,154	25,620
2 to 3 years	26,107	23,323
3 to 4 years	16,708	19,345
4 to 5 years	22,196	15,850
Over 5 years	15,514	17,787
<b>Total (1)</b>	<b>277,345</b>	<b>246,964</b>

(1) Includes \$247,808 million of deposits, each greater than one hundred thousand dollars, of which \$146,697 million were booked in Canada, \$71,770 million were booked in the United States and \$29,341 million were booked in other countries (\$221,954 million, \$130,197 million, \$65,963 million and \$25,794 million, respectively, in 2017). Of the \$146,697 million of deposits booked in Canada, \$55,190 million mature in less than three months, \$3,836 million mature in three to six months, \$12,909 million mature in six to twelve months and \$74,762 million mature after 12 months (\$130,197 million, \$41,418 million, \$7,922 million, \$10,574 million and \$70,283 million, respectively, in 2017). We have unencumbered liquid assets of \$242,612 million to support these and other deposit liabilities (\$213,757 million in 2017).

Most of our structured note liabilities included in deposits have been designated at fair value through profit or loss and are accounted for at fair value, which aligns the accounting result with the way the portfolio is managed. The fair value and notional amount due at contractual maturity of these notes as at October 31, 2018 were \$15,309 million and \$15,668 million respectively (\$13,674 million and \$13,563 million, respectively, in 2017). The change in fair value of these structured notes was recorded as an increase of \$498 million in non-interest revenue, trading revenues, and a decrease of \$28 million before tax was recorded in other comprehensive income related to changes in our own credit spread for the year ended October 31, 2018 (a decrease of \$72 million recorded in non-interest revenue, trading revenues, and a decrease of \$169 million related to changes in our own credit spread in 2017). The impact of changes in our own credit spread is measured based on movements in our own credit spread year over year.

The cumulative change in fair value related to changes in our own credit spread that has been recognized since the notes were designated at fair value to October 31, 2018 was an unrealized loss of approximately \$331 million (unrealized loss of approximately \$303 million in 2017), and \$255 million of this unrealized loss has been recorded in other comprehensive income (\$227 million in 2017).

## Note 14: Other Liabilities

### Acceptances

Acceptances represent a form of negotiable short-term debt that is issued by our customers, which we guarantee for a fee. The fees earned are recorded in lending fees in our Consolidated Statement of Income over the term of the acceptance. The amount potentially due under acceptances is recorded in other liabilities on our Consolidated Balance Sheet. We record the bank's equivalent claim against our customers in the event of a call on these commitments in other assets on our Consolidated Balance Sheet.

### Securities Lending and Borrowing

Securities lending and borrowing transactions are generally collateralized by securities or cash. Cash advanced or received as collateral is recorded in other assets or other liabilities, respectively. Interest earned on cash collateral is recorded in interest, dividend and fee income in our Consolidated Statement of Income, and interest expense on cash collateral is recorded in interest expense, other liabilities, in our Consolidated Statement of Income. The transfer of the securities to counterparties is only reflected in our Consolidated Balance Sheet if the risks and rewards of ownership have also been transferred. Securities borrowed are not recognized in our Consolidated Balance Sheet unless they are then sold to third parties, in which case the obligation to return the securities is recorded in Securities sold but not yet purchased at fair value, with any gains or losses recorded in non-interest revenue, trading revenues.

### Securities Sold but not yet Purchased

Securities sold but not yet purchased represent our obligations to deliver securities that we did not own at the time of sale. These obligations are recorded at their fair value. Adjustments to the fair value as at the balance sheet date and gains and losses on the settlement of these obligations are recorded in trading revenues in our Consolidated Statement of Income.

### Securities Lent or Sold Under Repurchase Agreements

Securities lent or sold under repurchase agreements represent short-term funding transactions in which we sell securities that we own and simultaneously commit to repurchase the same securities at a specified price on a specified date in the future. The obligation to repurchase these securities is recorded at the amount owing. The interest expense related to these liabilities is recorded on an accrual basis in interest expense, other liabilities, in our Consolidated Statement of Income.

### Securitization and Structured Entities' Liabilities

Securitization and structured entities' liabilities include notes issued by our consolidated bank securitization vehicles and liabilities associated with the securitization of our Canadian mortgage loans as part of the Canada Mortgage Bond program, the National Housing Act Mortgage-Backed Securities program and our own program. Additional information on our securitization program and associated liabilities is provided in Notes 6 and 7. These liabilities are initially measured at fair value plus any directly attributable costs and are subsequently measured at amortized cost. The interest expense related to these liabilities is recorded in interest expense, other liabilities, in our Consolidated Statement of Income.



## Other

The components of other within other liabilities are as follows:

(Canadian \$ in millions)	2018	2017
Accounts payable, accrued expenses and other items	8,119	7,894
Accrued interest payable	1,385	1,037
Cash collateral	4,343	3,696
Insurance-related liabilities	9,585	8,959
Liabilities of subsidiaries, other than deposits	9,283	6,931
Other employee future benefits liability (Note 21)	960	1,303
Payable to brokers, dealers and clients	1,898	2,177
Pension liability (Note 21)	256	364
<b>Total</b>	<b>35,829</b>	<b>32,361</b>

Certain comparative figures have been reclassified to conform with the current year's presentation.

## Insurance-Related Liabilities

We are engaged in insurance businesses related to life and health insurance, annuities and reinsurance.

We designate the obligation related to certain investment contracts in our insurance business at fair value through profit or loss, which eliminates a measurement inconsistency that would otherwise arise from measuring the investment contract liabilities and offsetting changes in the fair value of the investments supporting them on a different basis. The fair value of these investment contract liabilities as at October 31, 2018 of \$800 million (\$749 million as at October 31, 2017) is recorded in other liabilities in our Consolidated Balance Sheet. The change in fair value of these investment contract liabilities resulted in a decrease of \$28 million in insurance claims, commissions and changes in policy benefit liabilities for the year ended October 31, 2018 (decrease of \$41 million in 2017 and an increase of \$55 million in 2016). For the year ended October 31, 2018, a loss of \$2 million was recorded in other comprehensive income related to changes in our credit spread (loss of \$32 million in 2017 and \$7 million in 2016). The impact of changes in our own credit spread is measured based on movements in our own credit spread year over year. Changes in the fair value of investments backing these investment contract liabilities are recorded in non-interest revenue, insurance revenue.

Insurance claims and policy benefit liabilities represent current claims and estimates of future insurance policy benefit liabilities. Liabilities for life insurance contracts are determined using the Canadian Asset Liability Method, which incorporates best-estimate assumptions for mortality, morbidity, policy lapses, surrenders, future investment yields, policy dividends, administration costs and margins for adverse deviation. These assumptions are reviewed at least annually and updated to reflect actual experience and market conditions.

A reconciliation of the change in insurance-related liabilities is as follows:

(Canadian \$ in millions)	2018	2017
Insurance-related liabilities, beginning of year	8,959	7,909
Increase (decrease) in life insurance policy benefit liabilities from:		
New business	742	545
In-force policies	(400)	66
Changes in actuarial assumptions and methodology	3	(52)
Foreign currency	-	(1)
Net increase in life insurance policy benefit liabilities	345	558
Change in other insurance-related liabilities	281	492
Insurance-related liabilities, end of year	9,585	8,959

## Reinsurance

In the ordinary course of business, our insurance subsidiaries reinsure risks to other insurance and reinsurance companies in order to provide greater diversification, limit loss exposure to large risks, and provide additional capacity for future growth. These ceding reinsurance arrangements do not relieve our insurance subsidiaries of their direct obligation to the insured parties. We evaluate the financial condition of the reinsurers and monitor their credit ratings to minimize our exposure to losses from reinsurer insolvency.

Reinsurance premiums ceded are recorded net against direct premium income and are included in non-interest revenue, insurance revenue, in our Consolidated Statement of Income for the years ended October 31, 2018, 2017 and 2016, as shown in the table below:

(Canadian \$ in millions)	2018	2017	2016
Direct premium income	1,976	1,750	1,561
Ceded premiums	(148)	(157)	(271)
	1,828	1,593	1,290

## Note 15: Subordinated Debt

Subordinated debt represents our direct unsecured obligations to our debt holders, in the form of notes and debentures and forms part of our regulatory capital. Subordinated debt is recorded at amortized cost using the effective interest rate method. Where appropriate, we enter into fair value hedges to hedge the risks caused by changes in interest rates (see Note 8). The rights of the holders of our notes and debentures are subordinate to the claims of depositors and certain other creditors. We require approval from OSFI before we can redeem any part of our subordinated debt.

The face values, terms to maturity and carrying values of our subordinated debt are as follows:

(Canadian \$ in millions, except as noted)	Face value	Maturity date	Interest rate (%)	Redeemable at our option	2018 Total	2017 Total
Debentures Series 20	150	December 2025 to 2040	8.25	Not redeemable	143	148
Series F Medium-Term Notes, First Tranche	900	March 2023	6.17	March 2018 (1)	–	905
Series H Medium-Term Notes, First Tranche (8)	1,000	September 2024	3.12	September 2019 (2)	1,003	1,016
Series H Medium-Term Notes, Second Tranche (8)	1,000	December 2025	3.34	December 2020 (3)	916	969
Series I Medium-Term Notes, First Tranche (8)	1,250	June 2026	3.32	June 2021 (4)	1,222	1,178
Series I Medium-Term Notes, Second Tranche (8)	850	June 2027	2.57	June 2022 (5)	813	813
3.803% Subordinated Notes due 2032 (8)(9)	US 1,250	December 2032	3.80	December 2027 (6)	1,573	–
4.338% Subordinated Notes due 2028 (8)(10)	US 850	October 2028	4.34	October 2023 (7)	1,112	–
<b>Total (11)</b>					<b>6,782</b>	<b>5,029</b>

(1) All \$900 million Series F Medium-Term Notes, First Tranche were redeemed on March 28, 2018 for 100% of the principal amount plus accrued and unpaid interest to, but excluding, the redemption date.

(2) Redeemable at par together with accrued and unpaid interest to, but excluding, their redemption date commencing September 19, 2019.

(3) Redeemable at the greater of par and the Canada Yield Price prior to December 8, 2020, and redeemable at par together with accrued and unpaid interest to, but excluding, their redemption date commencing December 8, 2020.

(4) Redeemable at the greater of par and the Canada Yield Price prior to June 1, 2021, and redeemable at par together with accrued and unpaid interest to, but excluding, their redemption date commencing June 1, 2021.

(5) Redeemable at the greater of par and the Canada Yield Price prior to June 1, 2022, and redeemable at par together with accrued and unpaid interest to, but excluding, their redemption date commencing June 1, 2022.

(6) Redeemable at par on December 15, 2027 together with accrued and unpaid interest to, but excluding, the redemption date.

(7) Redeemable at par on October 5, 2023 together with accrued and unpaid interest to, but excluding, the redemption date.

(8) These notes include a non-viability contingent capital provision, which is necessary for notes issued after a certain date to qualify as regulatory capital under Basel III. As such, the notes are convertible into a variable number of our common shares if OSFI announces that the bank is, or is about to become, non-viable or if a federal or provincial government in Canada publicly announces that the bank has accepted or agreed to accept a capital injection, or equivalent support, to avoid non-viability. In such an event, each note is convertible into common shares pursuant to an automatic conversion formula with a multiplier and a conversion price based on the greater of: (i) a floor price of \$5.00 and (ii) the current market price of our common shares based on the volume weighted average trading price of our common shares on the TSX. The number of common shares issued is determined by dividing the par value of the note (including accrued and unpaid interest on such note) by the conversion price and then times the multiplier.

(9) On December 12, 2017, we issued US\$1,250 million of 3.803% subordinated notes.

(10) On October 5, 2018, we issued US\$850 million of 4.338% subordinated notes.

(11) Certain amounts of subordinated debt were issued at a premium or discount and include fair value hedge adjustments, which together decreased their carrying value as at October 31, 2018 by \$233 million (\$121 million in 2017); see Note 8 for further details. The carrying value is also adjusted for the subordinated debt holdings, held for market making purposes.

certain comparative figures have been reclassified to conform with the current year's presentation.

The aggregate remaining maturities of our subordinated debt, based on the maturity dates under the terms of issue, can be found in the blue-tinted font in the Contractual Maturities of Assets and Liabilities and Off-Balance Sheet Commitments section of Management's Discussion and Analysis on pages 107 to 108 of this report.

## Note 16: Equity

### Share Capital

(Canadian \$ in millions, except as noted)

	2018			2017		
	Number of shares	Amount	Dividends declared per share	Number of shares	Amount	Dividends declared per share
<b>Preferred Shares – Classified as Equity</b>						
Class B – Series 14 (1)	-	-	-	-	-	0.66
Class B – Series 15 (2)	-	-	-	-	-	0.73
Class B – Series 16 (3)	-	-	0.64	6,267,391	157	0.85
Class B – Series 17 (4)	-	-	0.52	5,732,609	143	0.55
Class B – Series 25	9,425,607	236	0.45	9,425,607	236	0.45
Class B – Series 26	2,174,393	54	0.59	2,174,393	54	0.43
Class B – Series 27	20,000,000	500	1.00	20,000,000	500	1.00
Class B – Series 29	16,000,000	400	0.98	16,000,000	400	0.98
Class B – Series 31	12,000,000	300	0.95	12,000,000	300	0.95
Class B – Series 33	8,000,000	200	0.95	8,000,000	200	0.95
Class B – Series 35	6,000,000	150	1.25	6,000,000	150	1.25
Class B – Series 36	600,000	600	58.50	600,000	600	58.50
Class B – Series 38	24,000,000	600	1.21	24,000,000	600	1.33
Class B – Series 40 (5)	20,000,000	500	1.13	20,000,000	500	0.80
Class B – Series 42 (6)	16,000,000	400	1.10	16,000,000	400	0.45
Class B – Series 44 (7)	16,000,000	400	-	-	-	-
		<b>4,340</b>			<b>4,240</b>	
<b>Common Shares</b>						
Balance at beginning of year	647,816,318	13,032		645,761,333	12,539	
Issued under the Shareholder Dividend Reinvestment and Share Purchase Plan	-	-		4,821,184	448	
Issued/cancelled under the Stock Option Plan and other stock-based compensation plans (Note 20)	1,513,307	99		2,233,801	146	
Repurchased for cancellation	(10,000,000)	(202)		(5,000,000)	(101)	
<b>Balance at End of Year</b>	<b>639,329,625</b>	<b>12,929</b>	<b>3.78</b>	<b>647,816,318</b>	<b>13,032</b>	<b>3.56</b>
<b>Share Capital</b>		<b>17,269</b>			<b>17,272</b>	

- On May 25, 2017, we redeemed all 10 million Non-Cumulative Perpetual Class B Preferred Shares, Series 14, at a price of \$25.00 cash per share plus all declared and unpaid dividends. Dividends declared for the year ended October 31, 2017 were \$0.66 per share and 10 million shares were outstanding at the time of the dividend declaration.
- On May 25, 2017, we redeemed all 10 million Non-Cumulative Perpetual Class B Preferred Shares, Series 15, at a price of \$25.00 cash per share plus all declared and unpaid dividends. Dividends declared for the year ended October 31, 2017 were \$0.73 per share and 10 million shares were outstanding at the time of the dividend declaration.
- On August 25, 2018, we redeemed all 6,267,391 Non-Cumulative Perpetual Class B Preferred Shares, Series 16, at a price of \$25.00 cash per share plus all declared and unpaid dividends. Dividends declared for the year ended October 31, 2018 were \$0.64 per share and 6,267,391 shares were outstanding at the time of the dividend declaration.
- On August 25, 2018, we redeemed all 5,732,609 Non-Cumulative Perpetual Class B Preferred Shares, Series 17, at a price of \$25.00 cash per share plus all declared and unpaid dividends. Dividends declared for the year ended October 31, 2018 were \$0.52 per share and 5,732,609 shares were outstanding at the time of the dividend declaration.
- On March 9, 2017, we issued 20 million Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 40, at a price of \$25.00 cash per share for gross proceeds of \$500 million.
- On June 29, 2017, we issued 16 million Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 42, at a price of \$25.00 cash per share for gross proceeds of \$400 million.
- On September 17, 2018, we issued 16 million Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 44, at a price of \$25.00 cash per share for gross proceeds of \$400 million.

### Preferred Share Rights and Privileges

(Canadian \$, except as noted)

	Redemption amount	Quarterly non-cumulative dividend (1)	Reset premium	Date redeemable / convertible	Convertible to
Class B – Series 25	25.00	\$0.112813 (2)	1.15%	August 25, 2021 (3)(4)	Class B – Series 26 (8)
Class B – Series 26	25.00	Floating (7)	1.15%	August 25, 2021 (3)(5)	Class B – Series 25 (8)
Class B – Series 27	25.00	\$ 0.2500 (2)	2.33%	May 25, 2019 (3)(4)	Class B – Series 28 (8)
Class B – Series 29	25.00	\$ 0.24375 (2)	2.24%	August 25, 2019 (3)(4)	Class B – Series 30 (8)
Class B – Series 31	25.00	\$ 0.2375 (2)	2.22%	November 25, 2019 (3)(4)	Class B – Series 32 (8)
Class B – Series 33	25.00	\$ 0.2375 (2)	2.71%	August 25, 2020 (3)(4)	Class B – Series 34 (8)
Class B – Series 35	25.00	\$ 0.3125	Does not reset	August 25, 2020 (6)	Not convertible
Class B – Series 36	1,000.00	\$ 14.6250 (2)	4.97%	November 25, 2020 (3)(4)	Class B – Series 37 (8)
Class B – Series 38	25.00	\$0.303125 (2)	4.06%	February 25, 2022 (3)(4)	Class B – Series 39 (8)
Class B – Series 40	25.00	\$ 0.28125 (2)	3.33%	May 25, 2022 (3)(4)	Class B – Series 41 (8)
Class B – Series 42	25.00	\$ 0.2750 (2)	3.17%	August 25, 2022 (3)(4)	Class B – Series 43 (8)
Class B – Series 44	25.00	\$0.303125 (2)	2.68%	November 25, 2023 (3)(4)	Class B – Series 45 (8)

- Non-cumulative dividends are payable quarterly as and when declared by the Board of Directors.
- The dividend rate will reset on the date redeemable and every five years thereafter at a rate equal to the 5-year Government of Canada bond yield plus the reset premium noted. If converted to a floating rate series, the rate will be set as and when declared at the 3-month Government of Canada treasury bill yield plus the reset premium noted.
- Redeemable on the date noted and every five years thereafter.
- Convertible on the date noted and every five years thereafter if not redeemed. If converted, Series 26, 28, 30, 32, 34, 37, 39, 41, 43 and 45 are floating rate preferred shares.
- Convertible on the date noted and every five years thereafter if not redeemed. If converted, Series 25 are fixed rate preferred shares.
- Series 35 is subject to a redemption premium if redeemed prior to August 25, 2024.
- Floating rate will be set as and when declared at the 3-month Government of Canada treasury bill yield plus a reset premium.
- If converted, the holders have the option to convert back to the original preferred shares on subsequent redemption dates.

## Authorized Share Capital

We classify financial instruments that we issue as financial liabilities, equity instruments or compound instruments. Financial instruments that will be settled by a variable number of our common shares upon conversion by the holders are classified as liabilities on our Consolidated Balance Sheet. Dividends and interest payments on financial liabilities are classified as interest expense in our Consolidated Statement of Income. Financial instruments are classified as equity instruments when there is no contractual obligation to transfer cash or other financial assets. Further, issued instruments that are not mandatorily redeemable, or that are not convertible into a variable number of our common shares at the holder's option, are classified as equity and presented in share capital. Dividend payments on equity instruments are recognized as a reduction in equity.

### Common Shares

We are authorized by our shareholders to issue an unlimited number of our common shares, without par value, for unlimited consideration. Our common shares are not redeemable or convertible. Dividends are declared by our Board of Directors at their discretion. Historically, the Board of Directors has declared dividends on a quarterly basis and the amount can vary from quarter to quarter.

### Preferred Shares

We are authorized by our shareholders to issue an unlimited number of Class A Preferred Shares and Class B Preferred Shares, without par value, in series, for unlimited consideration. Class B Preferred Shares may be issued in a foreign currency.

### Treasury Shares

When we purchase our common shares as part of our trading business, we record the cost of those shares as a reduction in shareholders' equity. If those shares are resold at a price higher than their cost, the premium is recorded as an increase in contributed surplus. If those shares are resold at a price below their cost, the discount is recorded as a reduction first to contributed surplus and then to retained earnings for any amount in excess of total contributed surplus related to treasury shares.

## Non-Viability Contingent Capital

Class B – Series 27, Class B – Series 29, Class B – Series 31, Class B – Series 33, Class B – Series 35, Class B – Series 36, Class B – Series 38, Class B – Series 40, Class B – Series 42 and Class B – Series 44 preferred share issues include a non-viability contingent capital provision, which is necessary for the shares to qualify as regulatory capital under Basel III. As such, the shares are convertible into a variable number of our common shares if OSFI announces that the bank is, or is about to become, non-viable or if a federal or provincial government in Canada publicly announces that the bank has accepted or agreed to accept a capital injection, or equivalent support, to avoid non-viability. In such an event, each preferred share is convertible into common shares pursuant to an automatic conversion formula and a conversion price based on the greater of: (i) a floor price of \$5.00 and (ii) the current market price of our common shares based on the volume weighted average trading price of our common shares on the TSX. The number of common shares issued is determined by dividing the share value of the preferred share issuance (including declared and unpaid dividends on such preferred share issuance) by the conversion price and then times the multiplier.

## Normal Course Issuer Bid

We renewed our normal course issuer bid ("NCIB"), effective June 1, 2018 for one year. Under this NCIB, we may purchase up to 20 million of our common shares for cancellation. The timing and amount of purchases under the NCIB are subject to management discretion based on factors such as market conditions and capital levels. The bank will consult with OSFI before making purchases under the NCIB.

During the year ended October 31, 2018, we purchased for cancellation 10 million of our common shares.

During the year ended October 31, 2017, we purchased for cancellation 5 million of our common shares.

## Share Redemption and Dividend Restrictions

OSFI must approve any plan to redeem any of our preferred share issues for cash.

We are prohibited from declaring dividends on our preferred or common shares when we would be, as a result of paying such a dividend, in contravention of the capital adequacy, liquidity or any other regulatory directive issued under the *Bank Act (Canada)*. In addition, common share dividends cannot be paid unless all dividends declared and payable on our preferred shares have been paid or sufficient funds have been set aside to do so.

In addition, we have agreed that if BMO Capital Trust II (the "Trust"), an unconsolidated structured entity, fails to pay any required distribution on its capital trust securities, we will not declare dividends of any kind on any of our preferred or common shares for a period of time following the Trust's failure to pay the required distribution (as defined in the applicable prospectuses) unless the Trust first pays such distribution to the holders of its capital trust securities.

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

## Shareholder Dividend Reinvestment and Share Purchase Plan

We offer a Dividend Reinvestment and Share Purchase Plan ("DRIP") for our shareholders. Participation in the plan is optional. Under the terms of the DRIP, cash dividends on common shares are reinvested to purchase additional common shares. Shareholders also have the opportunity to make optional cash payments to acquire additional common shares.

For dividends paid in fiscal 2018, common shares to supply the DRIP were purchased in the open market.

For the dividends paid in the first two quarters of 2017, common shares to supply the DRIP were issued from treasury with a two percent discount. For the dividends paid in the third quarter of 2017, common shares to supply the DRIP were issued from treasury without a discount. For the dividends paid in the fourth quarter, common shares to supply the DRIP were purchased on the open market.

During the year ended October 31, 2018, we did not issue any common shares from treasury (4,821,184 in 2017) and purchased 1,995,353 common shares in the open market (504,873 in 2017) for delivery to shareholders under the DRIP.

## Potential Share Issuances

As at October 31, 2018, we had reserved 39,947,147 common shares (39,947,147 in 2017) for potential issuance in respect of the DRIP. We have also reserved 6,095,201 common shares (7,525,296 in 2017) for the potential exercise of stock options, as further described in Note 20.

## Note 17: Fair Value of Financial Instruments and Trading-Related Revenue

We record trading assets and liabilities, derivatives, certain equity and debt securities and securities sold but not yet purchased at fair value, and other non-trading assets and liabilities at amortized cost less allowances or write-downs for impairment. The fair values presented in this note are based upon the amounts estimated for individual assets and liabilities and do not include an estimate of the fair value of any of the legal entities or underlying operations that comprise our business. For certain portfolios of financial instruments where we manage exposures to similar and offsetting risks, fair value is determined on the basis of our net exposure to that risk.

Fair value represents the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between willing market participants at the measurement date. The fair value amounts disclosed represent point-in-time estimates that may change in subsequent reporting periods due to changes in market conditions or other factors. Some financial instruments are not typically exchangeable or exchanged and therefore it is difficult to determine their fair value. Where there is no quoted market price, we determine fair value using management's best estimates based on a range of valuation techniques and assumptions; since these involve uncertainties, the fair values may not be realized in an actual sale or immediate settlement of the asset or liability.

### Governance Over the Determination of Fair Value

Senior executive oversight of our valuation processes is provided through various valuation and risk committees. In order to ensure that all financial instruments carried at fair value are reasonably measured for risk management and financial reporting purposes, we have established governance structures and controls, such as model validation and approval, independent price verification ("IPV") and profit or loss attribution analysis ("PAA"), consistent with industry practice. These controls are applied independently of the relevant operating groups.

We establish and regularly update valuation methodologies for each financial instrument that is required to be measured at fair value. The application of valuation models for products or portfolios is subject to independent approval to ensure only validated models are used. The impact of known limitations of models and data inputs is also monitored on an ongoing basis. IPV is a process that regularly and independently verifies the accuracy and appropriateness of market prices or model inputs used in the valuation of financial instruments. This process assesses fair values using a variety of different approaches to verify and validate the valuations. PAA is a daily process used by management to identify and explain changes in fair value positions across all operating lines of business within BMO Capital Markets. This process works in concert with other processes to ensure that the fair values being reported are reasonable and appropriate.

### Securities

For traded securities, quoted market value is considered to be fair value. Quoted market value is based on bid or ask prices, depending on which is the most appropriate to measure fair value. Securities for which no active market exists are valued using all reasonably available market information. Our fair value methodologies are described below.

#### *Government Securities*

The fair value of government issued or guaranteed debt securities in active markets is determined by reference to recent transaction prices, broker quotes or third-party vendor prices. The fair value of securities that are not traded in an active market is modelled using implied yields derived from the prices of similar actively traded government securities and observable spreads. Market inputs to the model include coupon, maturity and duration.

#### *Mortgage-Backed Securities and Collateralized Mortgage Obligations*

The fair value of mortgage-backed securities and collateralized mortgage obligations is determined using independent prices obtained from third-party vendor prices, broker quotes and relevant market indices, as applicable. If such prices are not available, fair value is determined using cash flow models that make maximum use of observable market inputs or benchmark prices for similar instruments. Valuation assumptions for mortgage-backed securities and collateralized mortgage obligations include discount rates, expected prepayments, credit spreads and recoveries.

#### *Corporate Debt Securities*

The fair value of corporate debt securities is determined using prices observed in the most recent transactions. When observable price quotations are not available, fair value is determined based on discounted cash flow models using discounting curves and spreads obtained from independent dealers, brokers and multi-contributor pricing sources.

#### *Corporate Equity Securities*

The fair value of equity securities is based on quoted prices in active markets, where available. Where quoted prices in active markets are not readily available, fair value is determined using either quoted market prices for similar securities or using valuation techniques, which include discounted cash flow analysis and earnings multiples.

#### *Privately Issued Securities*

Privately issued debt and equity securities are valued using prices observed in recent market transactions, where available. Otherwise, fair value is derived from valuation models using a market or income approach. These models consider various factors, including projected cash flows, earnings, revenue and 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.

Prices from brokers and multi-contributor pricing sources are corroborated as part of our independent review process, which may include using valuation techniques or obtaining consensus or composite prices from other pricing services. We validate the estimates of fair value by independently obtaining multiple quotes for external market prices and input values. We review the approach taken by third-party vendors to ensure that the vendor employs a valuation model which maximizes the use of observable inputs such as benchmark yields, bid-ask spreads, underlying collateral, weighted-average terms to maturity and prepayment rate assumptions. Fair value estimates from internal valuation techniques are verified, where possible, by reference to prices obtained from third-party vendors.

## Loans

In determining the fair value of our fixed rate performing loans, we discount the remaining contractual cash flows, adjusted for estimated prepayment, at market interest rates currently offered for loans with similar terms and risks. For floating rate performing loans, changes in interest rates have minimal impact on fair value since interest rates are repriced or reset frequently. On that basis, fair value is assumed to be equal to carrying value.

## Derivative Instruments

A number of valuation techniques are employed to estimate fair value, including discounted cash flow analysis, the Black-Scholes model, Monte Carlo simulation and other accepted market models. These independently validated models incorporate current market data for interest rates, currency exchange rates, equity and commodity prices and indices, credit spreads, recovery rates, corresponding market volatility levels, spot prices, correlation levels and other market-based pricing factors. Option implied volatilities, an input into many valuation models, are either obtained directly from market sources or calculated from market prices. Multi-contributor pricing sources are used wherever possible.

In determining the fair value of complex and customized derivatives, we consider all reasonably available information, including dealer and broker quotations, multi-contributor pricing sources and any relevant observable market inputs. Our 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 volatilities.

We calculate a credit valuation adjustment (“CVA”) to recognize the risk that any given derivative counterparty may not ultimately be able to fulfill its obligations. The CVA is derived from market-observed credit spreads or proxy credit spreads and our assessment of the net counterparty credit risk exposure, taking into account credit mitigants such as collateral, master netting agreements and novation to central counterparties. We also calculate a funding valuation adjustment (“FVA”) to recognize the implicit funding costs associated with over-the-counter derivative positions. The FVA is determined by reference to market funding spreads.

## Deposits

In determining the fair value of our deposits, we incorporate the following assumptions:

- For fixed rate, fixed maturity deposits, we discount the remaining contractual cash flows for these deposits, adjusted for expected redemptions, at market interest rates currently offered for deposits with similar terms and risks. Fair value of our senior note liabilities and covered bonds is determined by referring to current market prices for similar instruments or using valuation techniques, such as discounted cash flows that use market interest rate curves and funding spreads.
- For fixed rate deposits with no defined maturities, we consider fair value to equal carrying value, based on carrying value being equivalent to the amount payable on the reporting date.
- For floating rate deposits, changes in interest rates have minimal impact on fair value since deposits reprice to market frequently. On that basis, fair value is assumed to equal carrying value.

A portion of our structured note liabilities that have coupons or repayment terms linked to the performance of interest rates, foreign currencies, commodities or equity securities have been designated at fair value through profit or loss. The fair value of these structured notes is estimated using internally validated valuation models and incorporates observable market prices for identical or comparable securities, as well as other inputs, such as interest rate yield curves, option volatilities and foreign exchange rates, where appropriate. Where observable prices or inputs are not available, management judgment is required to determine the fair value by assessing other relevant sources of information, such as historical data and proxy information from similar transactions.

## Securities Sold But Not Yet Purchased

The fair value of these obligations is based on the fair value of the underlying securities, which can be equity or debt securities. As these obligations are fully collateralized, the method used to determine fair value would be the same as that used for the relevant underlying equity or debt securities.

## Securitization and Structured Entities’ Liabilities

The determination of the fair value of securitization and structured entities’ liabilities is based on quoted market prices or quoted market prices for similar financial instruments, where available. Where quoted prices are not available, fair value is determined using valuation techniques, such as discounted cash flow models that maximize the use of observable inputs.

## Subordinated Debt

The fair value of our subordinated debt is determined by referring to current market prices for the same or similar instruments.

## Financial Instruments with a Carrying Value Approximating Fair Value

### *Short-term and Other Financial Instruments*

Carrying value is assumed to be a reasonable estimate of fair value for our cash and cash equivalents.

The carrying value of certain financial assets and liabilities, such as interest bearing deposits with banks, securities borrowed or purchased under resale agreements, customers’ liability under acceptances, other assets, acceptances, securities lent or sold under repurchase agreements and other liabilities, is a reasonable estimate of fair value due to their short-term nature or because they are frequently repriced to current market rates.

Certain assets, including premises and equipment, goodwill and intangible assets, as well as shareholders’ equity, are not considered financial instruments and therefore no fair value has been determined for these items.

## Fair Value Hierarchy

We use a fair value hierarchy to categorize financial instruments according to the inputs we use in valuation techniques to measure fair value.

## Fair Value of Financial Instruments Not Carried at Fair Value on the Balance Sheet

Set out in the following tables are the fair values of financial instruments not carried at fair value on our Consolidated Balance Sheet.

(Canadian \$ in millions)

	2018				
	Carrying value	Fair value	Valued using quoted market prices	Valued using models (with observable inputs)	Valued using models (without observable inputs)
<b>Securities</b>					
Amortized cost	6,485	6,288	429	5,795	64
<b>Loans</b> (1)					
Residential mortgages	119,544	118,609	-	118,609	-
Consumer instalment and other personal	62,687	62,618	-	62,618	-
Credit cards	8,099	8,099	-	8,099	-
Business and government (2)	192,225	191,989	-	191,989	-
	382,555	381,315	-	381,315	-
<b>Deposits</b> (3)	506,742	506,581	-	506,581	-
<b>Securitization and structured entities' liabilities</b>	25,051	24,838	-	24,838	-
<b>Subordinated debt</b>	6,782	6,834	-	6,834	-

(1) Carrying value of loans is net of allowance.

(2) Excludes \$1,450 million of loans classified as FVTPL upon adoption of IFRS 9 (refer to Note 28).

(3) Excludes \$15,309 million of structured note liabilities designated at FVTPL and accounted for at fair value.

This table excludes financial instruments with a carrying value approximating fair value, such as cash and cash equivalents, interest bearing deposits with banks, securities borrowed or purchased under resale agreements, customers' liability under acceptances, other assets, acceptances, securities lent or sold under repurchase agreements and other liabilities.

(Canadian \$ in millions)

	2017				
	Carrying value	Fair value	Valued using quoted market prices	Valued using models (with observable inputs)	Valued using models (without observable inputs)
<b>Securities</b>					
Held to maturity	9,094	9,096	2,522	6,574	-
<b>Loans</b> (1)					
Residential mortgages	115,165	114,821	-	114,821	-
Consumer instalment and other personal	61,465	61,470	-	61,470	-
Credit cards	7,828	7,828	-	7,828	-
Business and government	174,084	174,105	-	174,105	-
	358,542	358,224	-	358,224	-
<b>Deposits</b> (2)	466,118	466,441	-	466,441	-
<b>Securitization and structured entities' liabilities</b>	23,054	23,148	-	23,148	-
<b>Subordinated debt</b>	5,029	5,255	-	5,255	-

(1) Carrying value of loans is net of allowance.

(2) Excludes \$13,674 million of structured note liabilities designated at FVTPL and accounted for at fair value.

This table excludes financial instruments with a carrying value approximating fair value, such as cash and cash equivalents, interest bearing deposits with banks, securities borrowed or purchased under resale agreements, customers' liability under acceptances, other assets, acceptances, securities lent or sold under repurchase agreements and other liabilities.

Certain comparative figures have been reclassified to conform with the current year's presentation.

## Valuation Techniques and Significant Inputs

We determine the fair value of publicly traded fixed maturity debt and equity securities using quoted prices in active markets (Level 1) when these are available. When quoted prices in active markets are not available, we determine the fair value of financial instruments using models such as discounted cash flows, with observable market data for inputs, such as yield and prepayment rates or broker quotes and other third-party vendor quotes (Level 2). Fair value may also be determined using models where significant market inputs are not observable due to inactive markets or minimal market activity (Level 3). We maximize the use of observable market inputs to the extent possible.

Our Level 2 trading securities are primarily valued using discounted cash flow models with observable spreads or broker quotes. The fair value of Level 2 FVOCI securities, previously classified as available-for-sale securities, is determined using discounted cash flow models with observable spreads or third-party vendor quotes. Level 2 structured note liabilities are valued using models with observable market information. Level 2 derivative assets and liabilities are valued using industry-standard models and observable market information.



The extent of our use of actively quoted market prices (Level 1), internal models using observable market information as inputs (Level 2) and models without observable market information as inputs (Level 3) in the valuation of securities, fair value liabilities, derivative assets and derivative liabilities is presented in the following tables:

## Classified under IFRS 9

(Canadian \$ in millions)

	Valued using quoted market prices	Valued using models (with observable inputs)	Valued using models (without observable inputs)	2018 Total
<b>Trading Securities</b>				
Issued or guaranteed by:				
Canadian federal government	9,107	1,213	-	10,320
Canadian provincial and municipal governments	4,013	4,689	-	8,702
U.S. federal government	9,465	52	-	9,517
U.S. states, municipalities and agencies	78	1,138	-	1,216
Other governments	1,210	201	-	1,411
NHA MBS and U.S. agency MBS and CMO	60	8,869	255	9,184
Corporate debt	2,973	6,218	7	9,198
Loans	-	199	-	199
Corporate equity	49,946	4	-	49,950
	<b>76,852</b>	<b>22,583</b>	<b>262</b>	<b>99,697</b>
<b>FVTPL Securities</b>				
Issued or guaranteed by:				
Canadian federal government	328	103	-	431
Canadian provincial and municipal governments	219	727	-	946
U.S. federal government	69	-	-	69
NHA MBS and U.S. agency MBS and CMO	-	7	-	7
Corporate debt	178	6,643	-	6,821
Corporate equity	1,378	134	1,825	3,337
	<b>2,172</b>	<b>7,614</b>	<b>1,825</b>	<b>11,611</b>
<b>FVOCI Securities</b>				
Issued or guaranteed by:				
Canadian federal government	11,978	827	-	12,805
Canadian provincial and municipal governments	3,315	3,547	-	6,862
U.S. federal government	16,823	-	-	16,823
U.S. states, municipalities and agencies	14	3,640	1	3,655
Other governments	3,143	1,647	-	4,790
NHA MBS and U.S. agency MBS and CMO	-	13,687	-	13,687
Corporate debt	1,959	1,797	-	3,756
Corporate equity	-	-	62	62
	<b>37,232</b>	<b>25,145</b>	<b>63</b>	<b>62,440</b>
<b>Business and Government Loans</b>	-	-	1,450	1,450
<b>Fair Value Liabilities</b>				
Securities sold but not yet purchased	26,336	2,468	-	28,804
Structured note liabilities and other note liabilities	-	15,309	-	15,309
Annuity liabilities	-	800	-	800
	<b>26,336</b>	<b>18,577</b>	<b>-</b>	<b>44,913</b>
<b>Derivative Assets</b>				
Interest rate contracts	18	8,959	-	8,977
Foreign exchange contracts	16	12,983	-	12,999
Commodity contracts	166	1,894	-	2,060
Equity contracts	286	1,872	-	2,158
Credit default swaps	-	10	-	10
	<b>486</b>	<b>25,718</b>	<b>-</b>	<b>26,204</b>
<b>Derivative Liabilities</b>				
Interest rate contracts	14	8,620	-	8,634
Foreign exchange contracts	2	11,852	-	11,854
Commodity contracts	295	1,161	-	1,456
Equity contracts	246	2,183	1	2,430
Credit default swaps	-	36	1	37
	<b>557</b>	<b>23,852</b>	<b>2</b>	<b>24,411</b>

## Classified under IAS 39

(Canadian \$ in millions)

2017

	Valued using quoted market prices	Valued using models (with observable inputs)	Valued using models (without observable inputs)	Total
<b>Trading Securities</b>				
Issued or guaranteed by:				
Canadian federal government	8,712	2,115	-	10,827
Canadian provincial and municipal governments	3,177	4,150	-	7,327
U.S. federal government	9,417	56	-	9,473
U.S. states, municipalities and agencies	189	1,942	-	2,131
Other governments	630	193	-	823
NHA MBS, U.S. agency MBS and CMO	-	931	-	931
Corporate debt	1,485	10,278	-	11,763
Loans	3	150	-	153
Corporate equity	55,640	1	-	55,641
	79,253	19,816	-	99,069
<b>Available-for-Sale Securities</b>				
Issued or guaranteed by:				
Canadian federal government	8,283	897	-	9,180
Canadian provincial and municipal governments	920	2,707	-	3,627
U.S. federal government	14,269	-	-	14,269
U.S. states, municipalities and agencies	18	4,077	1	4,096
Other governments	2,290	1,268	-	3,558
NHA MBS, U.S. agency MBS and CMO	-	13,216	-	13,216
Corporate debt	1,551	2,972	2	4,525
Corporate equity	37	126	1,441	1,604
	27,368	25,263	1,444	54,075
<b>Other Securities</b>				
	-	-	333	333
<b>Fair Value Liabilities</b>				
Securities sold but not yet purchased	22,992	2,171	-	25,163
Structured note liabilities and other note liabilities	-	13,674	-	13,674
Annuity liabilities	-	749	-	749
	22,992	16,594	-	39,586
<b>Derivative Assets</b>				
Interest rate contracts	4	9,223	-	9,227
Foreign exchange contracts	17	17,196	-	17,213
Commodity contracts	232	846	-	1,078
Equity contracts	93	1,333	-	1,426
Credit default swaps	-	7	-	7
	346	28,605	-	28,951
<b>Derivative Liabilities</b>				
Interest rate contracts	7	8,309	-	8,316
Foreign exchange contracts	6	14,967	-	14,973
Commodity contracts	239	835	-	1,074
Equity contracts	166	3,220	-	3,386
Credit default swaps	-	55	-	55
	418	27,386	-	27,804

## Quantitative Information about Level 3 Fair Value Measurements

The table below presents the fair values of our significant Level 3 financial instruments, the valuation techniques used to determine their fair values and the value ranges of significant unobservable inputs used in the valuations. We have not applied any other reasonably possible alternative assumption to the significant Level 3 categories of private equity investments, as the net asset values are provided by the investment or fund managers.

As at October 31, 2018 (Canadian \$ in millions, except as noted)	Reporting line in fair value hierarchy table	Fair value of assets	Valuation techniques	Significant unobservable inputs	Range of input values (1)		Change in fair value reasonably possible alternatives (2)
					Low	High	
Private equity (3)	Corporate equity	<b>1,825</b>	Net Asset Value EV/EBITDA	Net Asset Value Multiple	<b>na</b> <b>6x</b>	<b>na</b> <b>18x</b>	<b>na</b> <b>na</b>
Loans	Business and government loans	<b>1,450</b>	Discounted cash flows	Discount margin	<b>50 bps</b>	<b>175 bps</b>	<b>3</b>

(1) The low and high input values represent the highest and lowest actual level of inputs used to value a group of financial instruments in a particular product category. These input ranges do not reflect the level of input uncertainty, but are affected by the specific underlying instruments within the product category. The input ranges will therefore vary from period to period based on the characteristics of the underlying instruments held at each balance sheet date.

(2) The impact of assuming a 10 basis point increase or decrease in discount margin for business and government loans.

(3) Included in private equity is \$889 million of Federal Reserve Bank and U.S. Federal Home Loan Bank shares that we hold to meet regulatory requirements.

na - not applicable

## Significant Unobservable Inputs in Level 3 Instrument Valuations

### Net Asset Value

Net asset value represents the estimated value of a security based on valuations received from the investment or fund manager. The valuation of certain private equity securities is based on the economic benefit we derive from our investment.

### EV/EBITDA Multiple

The fair value of private equity and merchant banking investments is derived by calculating an enterprise value ("EV") using the EV/EBITDA multiple and then proceeding through a waterfall of the company's capital structure to determine the value of the assets or securities we hold. The EV/EBITDA multiple is determined using judgment in considering factors such as multiples for comparable listed companies, recent transactions and company-specific factors, as well as liquidity discounts that account for the lack of active trading in these assets and securities.

### Discount Margin

Loan and corporate debt yield is the interest rate used to discount expected future cash flows in the valuation model. The discount margin is the difference between an instrument's yield and a benchmark instrument's yield. Benchmark instruments have high credit quality ratings and similar maturities, such as government bonds. The discount margin therefore represents a market return required for uncertainty in future cash flows. Generally a higher or lower discount margin will result in a lower or higher fair value.

### Significant Transfers

Our policy is to record transfers of assets and liabilities between fair value hierarchy levels at their fair values as at the end of each reporting period, consistent with the date of the determination of fair value. Transfers between the various fair value hierarchy levels reflect changes in the availability of quoted market prices or observable market inputs that result from changes in market conditions. The following is a discussion of the significant transfers between Level 1, Level 2 and Level 3 balances for the year ended October 31, 2018.

During the year ended October 31, 2018, \$2,578 million of trading securities, \$714 million of FVTPL securities and \$2,266 million of FVOCI securities (\$176 million of trading securities and \$107 million of available-for-sale securities, respectively, in 2017) were transferred from Level 1 to Level 2 due to reduced observability of the inputs used to value these securities. During the year ended October 31, 2018, \$4,122 million of trading securities, \$742 million of FVTPL securities and \$4,044 million of FVOCI securities (\$156 million of trading securities and \$56 million of available-for-sale securities, respectively, in 2017) were transferred from Level 2 to Level 1 due to increased availability of quoted prices in active markets.

During the year ended October 31, 2017, \$33 million of available-for-sale securities were transferred from Level 3 to Level 1 due to the availability of observable prices used to value these securities. No such transfers happened in 2018.

## Changes in Level 3 Fair Value Measurements

The tables below present a reconciliation of all changes in Level 3 financial instruments during the years ended October 31, 2018 and 2017, including realized and unrealized gains (losses) included in earnings and other comprehensive income.

For the year ended October 31, 2018 (Canadian \$ in millions)	Balance November 1, 2017	Change in fair value					Maturities/ Settlement	Transfers into Level 3	Transfers out of Level 3	Fair value as at October 31, 2018	Change in unrealized gains (losses) recorded in income for instruments still held (2)
		Included in earnings	Included in other compre- hensive income (1)	Purchases	Sales						
<b>Trading Securities</b>											
NHA MBS and U.S. agency MBS and CMO	-	(1)	4	306	(54)	-	-	-	255	(5)	
Corporate debt	-	-	-	7	-	-	-	-	7	-	
<b>Total trading securities</b>	<b>-</b>	<b>(1)</b>	<b>4</b>	<b>313</b>	<b>(54)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>262</b>	<b>(5)</b>	
<b>FVTPL Securities</b>											
Corporate debt (3)	73	-	(4)	5	-	-	-	(74)	-	-	
Corporate equity (3)(4)	1,701	12	31	307	(161)	(2)	-	(63)	1,825	5	
<b>Total FVTPL securities</b>	<b>1,774</b>	<b>12</b>	<b>27</b>	<b>312</b>	<b>(161)</b>	<b>(2)</b>	<b>-</b>	<b>(137)</b>	<b>1,825</b>	<b>5</b>	
<b>FVOCI Securities</b>											
Issued or guaranteed by:											
U.S. states, municipalities and agencies	1	-	-	-	-	-	-	-	1	na	
Corporate debt	2	-	-	-	-	(2)	-	-	-	na	
Corporate equity	-	-	-	62	-	-	-	-	62	na	
<b>Total FVOCI securities</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>62</b>	<b>-</b>	<b>(2)</b>	<b>-</b>	<b>-</b>	<b>63</b>	<b>na</b>	
<b>Business and Government</b>											
<b>Loans (5)</b>	<b>2,372</b>	<b>(2)</b>	<b>24</b>	<b>604</b>	<b>-</b>	<b>(1,548)</b>	<b>-</b>	<b>-</b>	<b>1,450</b>	<b>-</b>	
<b>Derivative Liabilities</b>											
Equity contracts	-	-	-	-	-	-	1	-	1	-	
Credit default swaps	-	-	-	-	-	-	1	-	1	-	
<b>Total derivative liabilities</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>2</b>	<b>-</b>	<b>2</b>	<b>-</b>	

(1) Foreign exchange translation on trading securities held by foreign subsidiaries is included in other comprehensive income, net foreign operations.

(2) Changes in unrealized gains (losses) on FVTPL securities still held on October 31, 2018 are included in earnings for the year.

(3) Includes \$73 million of debt instruments and \$260 million of equity instruments reclassified from other securities to FVTPL upon adoption of IFRS 9 (see Note 28).

(4) Includes \$1,441 million of equity instruments reclassified from available-for-sale to FVTPL upon adoption of IFRS 9 (see Note 28).

(5) Business and government loans were reclassified from amortized cost to FVTPL upon adoption of IFRS 9 (see Note 28).

na - not applicable

For the year ended October 31, 2017 (Canadian \$ in millions)	Change in fair value						Transfers into Level 3	Transfers out of Level 3	Fair value as at October 31, 2017	Change in unrealized gains (losses) recorded in income for instruments still held (2)
	Balance October 31, 2016	Included in earnings	Included in other comprehensive income (1)	Purchases	Sales	Maturities/Settlement				
<b>Trading Securities</b>										
Corporate debt	91	1	1	-	-	(93)	-	-	-	-
Total trading securities	91	1	1	-	-	(93)	-	-	-	-
<b>Available-for-Sale Securities</b>										
Issued or guaranteed by:										
U.S. states, municipalities and agencies										
	1	-	-	-	-	-	-	-	1	na
Corporate debt	4	-	-	-	(1)	(1)	-	-	2	na
Corporate equity	1,456	(40)	(15)	190	(117)	-	-	(33)	1,441	na
Total available-for-sale securities	1,461	(40)	(15)	190	(118)	(1)	-	(33)	1,444	na
<b>Other Securities</b>	320	(9)	(7)	134	(102)	(3)	-	-	333	(8)

(1) Foreign exchange translation on trading securities held by foreign subsidiaries is included in other comprehensive income, net foreign operations.

(2) Changes in unrealized gains (losses) on trading securities, derivative assets and derivative liabilities still held on October 31, 2017 are included in earnings for the year.

na - not applicable

## Trading-Related Revenue

Trading assets and liabilities, including derivatives, securities and financial instruments designated at fair value through profit or loss, are measured at fair value, with gains and losses recognized in trading revenues, non-interest revenue, in the Consolidated Statement of Income. Trading-related revenue includes net interest income and non-interest revenue and excludes underwriting fees and commissions on securities transactions, which are shown separately in the Consolidated Statement of Income. Net interest income arises from interest and dividends related to trading assets and liabilities and is reported net of interest expense associated with funding these assets and liabilities in the following table.

(Canadian \$ in millions)	2018	2017	2016
Interest rates	437	480	663
Foreign exchange	377	369	349
Equities	449	239	188
Commodities	63	84	66
Other	82	47	25
Total trading revenue	1,408	1,219	1,291
Reported as:			
Net interest income (1)	(422)	(133)	99
Non-interest revenue - trading revenue	1,830	1,352	1,192
Total trading revenue	1,408	1,219	1,291

(1) Amounts in brackets denote net interest expense.

## Note 18: Offsetting of Financial Assets and Financial Liabilities

Financial assets and financial liabilities are offset and the net amount is reported in our Consolidated Balance Sheet when there is a legally enforceable right to offset the recognized amounts and there is an intention to settle on a net basis, or realize the asset and settle the liability simultaneously. The following table presents the amounts that have been offset in our Consolidated Balance Sheet, including securities purchased under resale agreements, securities sold under repurchase agreements and derivative instruments, generally under a market settlement mechanism (e.g. an exchange or clearing house) where simultaneous net settlement can be achieved to eliminate credit and liquidity risk between counterparties. Also presented are amounts not offset in the Consolidated Balance Sheet related to transactions where a master netting agreement or similar arrangement is in place with a right to offset the amounts only in the event of default, insolvency or bankruptcy, or where the offset criteria are otherwise not met.

(Canadian \$ in millions)	2018						
	Gross amounts	Amounts offset in the balance sheet	Net amounts presented in the balance sheet	Amounts not offset in the balance sheet			
Impact of master netting agreements				Securities received/pledged as collateral (1)(2)	Cash collateral	Net amount (3)	
<b>Financial Assets</b>							
Securities borrowed or purchased under resale agreements	86,635	1,584	85,051	13,355	70,640	-	1,056
Derivative instruments	52,810	26,606	26,204	15,575	505	3,576	6,548
	139,445	28,190	111,255	28,930	71,145	3,576	7,604
<b>Financial Liabilities</b>							
Derivative instruments	51,017	26,606	24,411	15,575	555	1,492	6,789
Securities lent or sold under repurchase agreements	68,268	1,584	66,684	13,355	53,071	-	258
	119,285	28,190	91,095	28,930	53,626	1,492	7,047

	Gross amounts	Amounts offset in the balance sheet	Net amounts presented in the balance sheet	Amounts not offset in the balance sheet			Net amount (3)
				Impact of master netting agreements	Securities received/pledged as collateral (1)(2)	Cash collateral	
<b>Financial Assets</b>							
Securities borrowed or purchased under resale agreements	80,948	5,901	75,047	9,382	65,044	–	621
Derivative instruments	45,064	16,113	28,951	19,909	933	2,903	5,206
	126,012	22,014	103,998	29,291	65,977	2,903	5,827
<b>Financial Liabilities</b>							
Derivative instruments	43,917	16,113	27,804	19,909	1,263	1,642	4,990
Securities lent or sold under repurchase agreements	61,020	5,901	55,119	9,382	45,436	–	301
	104,937	22,014	82,923	29,291	46,699	1,642	5,291

(1) Financial assets received/pledged as collateral are disclosed at fair value and are limited to the net balance sheet exposure (i.e. any over-collateralization is excluded from the table).

(2) Certain amounts of collateral are restricted from being sold or repledged except in the event of default or the occurrence of other predetermined events.

(3) Not intended to represent our actual exposure to credit risk.

## Note 19: Capital Management

Our objective is to maintain a strong capital position in a cost-effective structure that: is appropriate given our target regulatory capital ratios and internal assessment of required economic capital; is consistent with our target credit ratings; underpins our operating groups' business strategies; and supports depositor, investor and regulator confidence, while building long-term shareholder value.

Our approach includes establishing limits, targets and performance measures that are used to manage balance sheet positions, risk levels and capital requirements, as well as issuing and redeeming capital instruments to achieve a cost-effective capital structure.

Regulatory capital requirements and risk-weighted assets for the consolidated entity are determined in accordance with OSFI's Capital Adequacy Requirements Guideline.

Common Equity Tier 1 (CET1) capital is the most permanent form of capital. It is comprised of common shareholders' equity less deductions for goodwill, intangible assets and certain other items. Tier 1 capital is primarily comprised of CET1, preferred shares and innovative hybrid instruments, less certain regulatory deductions.

Tier 2 capital is primarily comprised of subordinated debentures and may include certain loan loss allowances, less certain regulatory deductions. Total capital includes Tier 1 and Tier 2 capital. Details of the components of our capital position are presented in Notes 11, 12, 15 and 16.

CET1 Capital Ratio, Tier 1 Capital Ratio, Total Capital Ratio and Leverage Ratio are the primary regulatory capital measures.

- The CET1 Capital Ratio is defined as common shareholders' equity, net of capital adjustments, divided by CET1 capital risk-weighted assets.
- The Tier 1 Capital Ratio is defined as Tier 1 capital divided by Tier 1 capital risk-weighted assets.
- The Total Capital Ratio is defined as Total capital divided by Total capital risk-weighted assets.
- The Leverage Ratio is defined as Tier 1 capital divided by the sum of on-balance sheet items and specified off-balance sheet items, net of specified adjustments.

As at October 31, 2018, we met OSFI's required target capital ratios, which include a 2.5% Capital Conservation Buffer, a 1.0% Common Equity Tier 1 Surcharge for domestic systemically important banks, a Countercyclical Buffer and a 1.5% Domestic Stability Buffer.

### Regulatory Capital Measures and Risk-Weighted Assets

(Canadian \$ in millions, except as noted)	2018	2017
Common Equity Tier 1 Capital	<b>32,721</b>	30,633
Tier 1 Capital	<b>37,220</b>	35,108
Total Capital	<b>44,116</b>	40,596
Common Equity Tier 1 Capital Risk-Weighted Assets	<b>289,237</b>	269,466
Tier 1 Capital Risk-Weighted Assets	<b>289,420</b>	269,466
Total Capital Risk-Weighted Assets	<b>289,604</b>	269,466
Common Equity Tier 1 Capital Ratio	<b>11.3%</b>	11.4%
Tier 1 Capital Ratio	<b>12.9%</b>	13.0%
Total Capital Ratio	<b>15.2%</b>	15.1%
Leverage Ratio	<b>4.2%</b>	4.4%

All 2018 and 2017 balances above are on an "all-in" basis.

## Note 20: Employee Compensation – Share-Based Compensation

### Stock Option Plan

We maintain a Stock Option Plan for designated officers and employees. Options are granted at an exercise price equal to the closing price of our common shares on the day before the grant date. Stock options granted on or after December 2013 vest in equal tranches of 50% on the third and fourth anniversaries of their grant date. Options granted prior to December 2013 vest in tranches over a four-year period starting from their grant date. Each tranche is treated as a separate award with a different vesting period. Certain options can only be exercised once certain performance targets are met. All options expire 10 years from their grant date.

We determine the fair value of stock options on their grant date and record this amount as compensation expense over the period that the stock options vest, with a corresponding increase to contributed surplus. When these stock options are exercised, we issue shares and record the amount of proceeds, together with the amount recorded in contributed surplus, in share capital. The estimated grant date fair value of stock options granted to employees who are eligible to retire is expensed at the date of grant.

The following table summarizes information about our Stock Option Plan:

(Canadian \$, except as noted)	2018		2017		2016	
	Number of stock options	Weighted-average exercise price (1)	Number of stock options	Weighted-average exercise price (1)	Number of stock options	Weighted-average exercise price (1)
Outstanding at beginning of year	7,525,296	72.05	9,805,299	77.41	12,111,153	80.19
Granted	705,398	100.63	723,431	96.90	754,714	77.23
Exercised	1,513,307	58.40	2,233,801	57.80	2,103,391	55.32
Forfeited/cancelled	152,417	86.85	13,243	66.89	104,606	71.76
Expired	469,769	153.40	756,390	195.02	852,571	179.53
Outstanding at end of year	6,095,201	72.19	7,525,296	72.05	9,805,299	77.41
Exercisable at end of year	3,782,481	61.39	4,584,375	67.42	5,605,485	83.34
Available for grant	3,405,239		3,811,157		4,151,676	

(1) The weighted-average exercise prices reflect the conversion of foreign currency denominated options at the exchange rate as at October 31, 2018, October 31, 2017 and October 31, 2016, respectively.

For foreign currency denominated options exercised or expired during the year, the weighted-average exercise prices are translated using the exchange rates as at the settlement date and expiry date respectively.

Employee compensation expense related to this plan for the years ended October 31, 2018, 2017 and 2016 was \$7 million, \$8 million and \$6 million before tax, respectively (\$7 million, \$7 million and \$6 million after tax, respectively).

The intrinsic value of a stock option grant is the difference between the current market price of our common shares and the strike price of the option. The aggregate intrinsic value of stock options outstanding at October 31, 2018, 2017 and 2016 was \$162 million, \$232 million and \$211 million, respectively. The aggregate intrinsic value of stock options exercisable at October 31, 2018, 2017 and 2016 was \$140 million, \$174 million and \$146 million, respectively.

Options outstanding and exercisable at October 31, 2018 by range of exercise price were as follows:

(Canadian \$, except as noted)	Options outstanding			Options exercisable		
	Number of stock options	Weighted-average remaining contractual life (years)	Weighted-average exercise price (2)	Number of stock options	Weighted-average remaining contractual life (years)	Weighted-average exercise price (2)
Range of exercise prices						
\$30.01 to \$40.00	13,690	0.1	34.13	13,690	0.1	34.13
\$50.01 to \$60.00	1,736,930	2.3	55.88	1,736,930	2.3	55.88
\$60.01 to \$70.00	1,798,219	4.7	64.68	1,798,219	4.7	64.68
\$70.01 and over (1)	2,546,362	7.7	88.83	233,642	6.0	78.62

(1) Certain options were issued as part of the acquisition of M&I.

(2) The weighted-average exercise prices reflect the conversion of foreign currency denominated options at the exchange rate as at October 31, 2018.

The following table summarizes further information about our Stock Option Plan:

(Canadian \$ in millions, except as noted)	2018	2017	2016
Unrecognized compensation cost for non-vested stock option awards	5	5	4
Weighted-average period over which this cost will be recognized (in years)	2.6	2.7	2.5
Total intrinsic value of stock options exercised	67	90	55
Cash proceeds from stock options exercised	88	129	116
Weighted-average share price for stock options exercised (in dollars)	102.55	98.05	81.41

The fair value of options granted was estimated using a binomial option pricing model. The weighted-average fair value of options granted during the years ended October 31, 2018, 2017 and 2016 was \$11.30, \$11.62 and \$7.60, respectively. To determine the fair value of the stock option tranches on the grant date, the following ranges of values were used for each option pricing assumption:

	2018	2017	2016
Expected dividend yield	4.1%	4.3%	5.5%
Expected share price volatility	17.0% – 17.3%	18.4% – 18.8%	19.8% – 20.0%
Risk-free rate of return	2.1%	1.7% – 1.8%	1.3% – 1.4%
Expected period until exercise (in years)	6.5 – 7.0	6.5 – 7.0	6.5 – 7.0

Changes to the input assumptions can result in different fair value estimates.

Expected dividend yield is based on market expectations of future dividends on our common shares. Expected share price volatility is determined based on the market consensus implied volatility for traded options on our common shares. The risk-free rate is based on the yields of a Canadian swap curve with maturities similar to the expected period until exercise of the options. The weighted-average exercise price on the grant date for the years ended October 31, 2018, 2017 and 2016 was \$100.63, \$96.90 and \$77.23, respectively.

## Other Share-Based Compensation

### Share Purchase Plans

We offer various employee share purchase plans. The largest of these plans provides employees with the option of directing a portion of their gross salary toward the purchase of our common shares. We match 50% of employee contributions up to 6% of their individual gross salary to a maximum of \$100,000. Our contributions during the first two years vest after two years of participation in the plan, with subsequent contributions vesting immediately. The shares held in the employee share purchase plan are purchased on the open market and are considered outstanding for purposes of computing earnings per share. The dividends earned on our common shares held by the plan are used to purchase additional common shares on the open market.

We account for our contribution as employee compensation expense when it is contributed to the plan.

Employee compensation expense related to these plans for the years ended October 31, 2018, 2017 and 2016 was \$51 million, \$53 million and \$51 million, respectively. There were 17.8 million, 18.3 million and 18.9 million common shares held in these plans for the years ended October 31, 2018, 2017 and 2016, respectively.

### Compensation Trusts

We sponsor various share ownership arrangements, certain of which are administered through trusts into which our matching contributions are paid.

We are not required to consolidate our compensation trusts. The assets held by the trusts are not included in our consolidated financial statements.

Total assets held under our share ownership arrangements amounted to \$1,752 million as at October 31, 2018 (\$1,805 million in 2017).

### Mid-Term Incentive Plans

We offer mid-term incentive plans for executives and certain senior employees. Payment amounts are adjusted to reflect reinvested dividends and changes in the market value of our common shares. Depending on the plan, the recipient receives either a single cash payment at the end of the three-year period of the plan, or cash payments over the three years of the plan. As the awards are cash settled, they are recorded as liabilities. Amounts payable under such awards are recorded as compensation expense over the vesting period. Amounts related to units granted to employees who are eligible to retire are expensed at the time of grant. Subsequent changes in the fair value of the liability are recorded in compensation expense in the period in which they arise.

Mid-term incentive plan units granted during the years ended October 31, 2018, 2017 and 2016 totalled 5.9 million, 5.9 million and 6.4 million, respectively.

Prior to 2015, we entered into agreements with third parties to assume our liabilities related to a portion of units granted for a fixed up-front payment. For units subject to such arrangements, we no longer have any obligation for future cash payments and as a result no liability is recorded related to these awards. All cash payments made under such arrangements are deferred in the Consolidated Balance Sheet as other assets and are recognized on a straight-line basis over the vesting period. Subsequent changes in the market value of our common shares do not affect the amount of compensation expense related to these awards. During the year ended October 31, 2017, all remaining deferred compensation related to these arrangements was recognized.

Employee compensation expense related to plans where we entered into agreements with third parties for the years ended October 31, 2018, 2017 and 2016 was \$nil, \$(7) million and \$26 million before tax, respectively (\$nil, \$(5) million and \$19 million after tax, respectively).

Mid-term incentive plan units for which we did not enter into agreements with third parties for the years ended October 31, 2018, 2017 and 2016 totalled 5.9 million, 5.9 million and 6.4 million units, respectively. The grant date fair value of these awards as at October 31, 2018, 2017 and 2016 was \$581 million, \$515 million and \$492 million, respectively, for which we recorded employee compensation expense of \$595 million, \$703 million and \$537 million before tax, respectively (\$437 million, \$516 million and \$397 million after tax, respectively). We hedge the impact of the change in market value of our common shares by entering into total return swaps (equity contracts). We also enter into foreign currency swaps to manage the foreign exchange translation from our United States businesses. Gains on total return swaps and foreign currency swaps recognized for the years ended October 31, 2018, 2017 and 2016 were \$51 million, \$183 million and \$111 million, respectively, resulting in net employee compensation expense of \$544 million, \$520 million and \$426 million, respectively.

A total of 17.1 million, 17.0 million and 17.0 million mid-term incentive plan units were outstanding as at October 31, 2018, 2017 and 2016, respectively, and the intrinsic value of those awards which had vested was \$1,269 million, \$1,253 million and \$883 million, respectively. Cash payments made in relation to these liabilities were \$598 million, \$343 million and \$131 million, respectively.



*Deferred Incentive Plans*

We offer deferred incentive plans for members of our Board of Directors, executives and key employees in BMO Capital Markets and Wealth Management. Under these plans, fees, annual incentive payments and/or commissions can be deferred as share units of our common shares. These share units are either fully vested on the grant date or vest at the end of three years. The value of these share units is adjusted to reflect reinvested dividends and changes in the market value of our common shares.

Deferred incentive plan payments are paid in cash upon the participant's departure from the bank.

Employee compensation expense for these plans is recorded in the year the fees, incentive payments and/or commissions are earned. Changes in the amount of the incentive plan payments as a result of dividends and share price movements are recorded as increases or decreases in employee compensation expense in the period of the change.

Deferred incentive plan units granted during the years ended October 31, 2018, 2017 and 2016 totalled 0.3 million, 0.3 million and 0.4 million, respectively, and the grant date fair value of these units was \$33 million, \$32 million and \$28 million, respectively.

Liabilities related to these plans are recorded in other liabilities in our Consolidated Balance Sheet and totalled \$485 million and \$499 million as at October 31, 2018 and 2017, respectively. Payments made under these plans for the years ended October 31, 2018, 2017 and 2016 were \$60 million, \$32 million and \$53 million, respectively.

Employee compensation expense related to these plans for the years ended October 31, 2018, 2017 and 2016 was \$27 million, \$91 million and \$67 million before tax, respectively (\$20 million, \$67 million and \$50 million after tax, respectively). We have entered into derivative instruments to hedge our exposure related to these plans. Changes in the fair value of these derivatives are recorded as employee compensation expense in the period in which they arise. Gains on these derivatives for the years ended October 31, 2018, 2017 and 2016 were \$8 million, \$78 million and \$57 million before tax, respectively. These gains resulted in net employee compensation expense for the years ended October 31, 2018, 2017 and 2016 of \$19 million, \$13 million and \$10 million before tax, respectively (\$14 million, \$10 million and \$7 million after tax, respectively).

A total of 4.9 million, 5.0 million and 4.8 million deferred incentive plan units were outstanding as at October 31, 2018, 2017 and 2016, respectively.

## Note 21: Employee Compensation – Pension and Other Employee Future Benefits

### Pension and Other Employee Future Benefit Plans

We sponsor a number of arrangements globally, that provide pension and other employee future benefits to our retired and current employees. The largest of these arrangements, by defined benefit obligation, are the primary defined benefit pension plans for employees in Canada and the United States and the primary other employee future benefit plan for employees in Canada.

Pension arrangements include defined benefit pension plans, as well as supplementary arrangements that provide pension benefits in excess of statutory limits. Generally, under these plans we provide retirement benefits based on an employee's years of service and average annual earnings over a period of time prior to retirement. Our pension and other employee future benefit expenses, recorded in employee compensation expense, mainly comprise the current service cost plus or minus the interest on net defined benefit assets or liabilities. In addition, we provide defined contribution pension plans to employees in some of our subsidiaries. The costs of these plans, recorded in employee compensation expense, are equal to our contributions to the plans.

The defined benefit pension plans for our employees in the United States were closed to new members on April 1, 2016 and closed to future accruals on March 1, 2017. A defined contribution pension plan was made available for employees affected by the closure. As a result of the closure of these plans, we recorded a curtailment gain of \$52 million in non-interest expense, employee compensation, in our Consolidated Statement of Income in 2016.

During the fourth quarter of 2018, we announced changes to our other employee future benefits plan for Canadian employees that will become mandatory for new retirees beginning January 1, 2021. Plan changes include an increase in the service requirement for eligibility and flexible benefits with employer premium caps. We recorded a \$277 million benefit from the remeasurement of the benefit liability in non-interest expense, employee compensation, in our Consolidated Statement of Income.

We also provide other employee future benefits, including health and dental care benefits and life insurance, for eligible current and retired employees.

Short-term employee benefits, such as salaries, paid absences, bonuses and other benefits, are accounted for on an accrual basis over the period in which the employees provide the related services.

### Investment Policy

The defined benefit pension plans are administered under a defined governance structure, with the oversight resting with the Board of Directors.

The plans are managed under a framework that considers both assets and liabilities in the development of an investment policy and in managing risk. Over the past several years, we have implemented a liability-driven investment strategy for the primary Canadian plan to enhance risk-adjusted returns while reducing the plan's surplus volatility. This strategy has reduced the impact of the plan on our regulatory capital.

The plans invest in asset classes that include equities, fixed income and alternative strategies, under established investment guidelines. Plan assets are diversified across asset classes and by geographic exposure. They are managed by asset management firms that are responsible for the selection of investment securities. Derivative instruments are permitted under policy guidelines and are generally used to hedge foreign currency exposures, manage interest rate exposures or replicate the return of an asset.

## Asset Allocations

The asset allocation ranges and weighted-average actual asset allocations of our primary pension plans, based on the fair market values at October 31, are as follows:

	Pension benefit plans		
	Target range 2018	Actual 2018	Actual 2017
Equities	25% – 50%	37%	40%
Fixed income investments	25% – 55%	46%	46%
Other	10% – 40%	17%	14%

Our pension and other employee future benefit plan assets are measured at fair value on a recurring basis.

## Risk Management

The defined benefit pension plans are exposed to various risks, including market risk (interest rate, equity and foreign currency risks), credit risk, operational risk, surplus risk and longevity risk. We follow a number of approaches to monitor and actively manage these risks, including:

- monitoring surplus-at-risk, which measures a plan's risk in an asset-liability framework;
- stress testing and scenario analyses to evaluate the volatility of the plans' financial positions and any potential impact on the bank;
- hedging of currency exposures and interest rate risk within policy limits;
- controls related to asset mix allocations, geographic allocations, portfolio duration, credit quality of debt securities, sector guidelines, issuer/counterparty limits and others; and
- ongoing monitoring of exposures, performance and risk levels.

## Pension and Other Employee Future Benefit Liabilities

Our actuaries perform valuations of our defined benefit obligations for pension and other employee future benefits as at October 31 of each year using the projected unit credit method based on management's assumptions about discount rates, rates of compensation increase, retirement age, mortality and health care cost trend rates.

The discount rates for the primary Canadian and U.S. pension and other employee future benefit plans were selected based on the yields of high-quality AA rated corporate bonds with terms matching the plans' cash flows.

The fair value of plan assets is deducted from the defined benefit obligation to determine the net defined benefit asset or liability. For defined benefit pension plans that are in a net defined benefit asset position, 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"). Changes in the asset ceiling are recognized in other comprehensive income. Components of the change in our net defined benefit assets or liabilities and our pension and other employee future benefit expense are as follows:

**Current service cost** represents benefits earned in the current year. The cost is determined with reference to the current workforce and the amount of benefits to which employees will be entitled upon retirement, based on the provisions of our benefit plans.

**Interest on net defined benefit asset or liability** represents the increase in the net defined benefit asset or liability that results from the passage of time and is determined by applying the discount rate to the net defined benefit asset or liability.

**Actuarial gains and losses** may arise in two ways. First, each year our actuaries recalculate the defined benefit obligations and compare them to those estimated as at the previous year end. Any differences that result from changes in demographic and economic assumptions or from plan member experience being different from management's expectations at the previous year end are considered actuarial gains or losses. Second, actuarial gains and losses arise when there are differences between the discount rate and actual returns on plan assets. Actuarial gains and losses are recognized immediately in other comprehensive income as they occur and are not subsequently reclassified to income in future periods.

**Plan amendments** are changes in our defined benefit obligations that result from changes to provisions of the plans. The effects of plan amendments are recognized immediately in income when a plan is amended.

**Settlements** occur when defined benefit obligations for plan participants are settled, usually through lump sum cash payments, and as a result we no longer have any obligation to provide such participants with benefit payments in the future.

## Funding of Pension and Other Employee Future Benefit Plans

We fund our defined benefit pension plans in Canada and the United States in accordance with statutory requirements, and the assets in these plans are used to pay benefits to retirees and other employees. Some groups of employees are also eligible to make voluntary contributions in order to receive enhanced benefits. Our supplementary pension plan in Canada is funded, while in the United States the supplementary pension plan is unfunded.

Our other employee future benefit plans in Canada and the United States are either partially funded or unfunded. Benefit payments related to these plans are paid either through the respective plan or directly by us.

We measure the fair value of plan assets for our plans in Canada and the United States as at October 31. In addition to actuarial valuations for accounting purposes, we are required to prepare valuations for determining our minimum funding requirements for our pension arrangements in accordance with the relevant statutory framework (our "funding valuation"). An annual funding valuation is performed for our plans in Canada and the United States. The most recent funding valuation for our primary Canadian pension plan was performed as at October 31, 2018 and the most recent funding valuation for our primary U.S. pension plan was performed as at January 1, 2018. Benefit payments for fiscal 2019 are estimated to be \$486 million.

A summary of plan information for the past three years is as follows:

(Canadian \$ in millions)	Pension benefit plans			Other employee future benefit plans		
	2018	2017	2016	2018	2017	2016
Defined benefit obligation	<b>8,311</b>	8,846	8,992	<b>1,113</b>	1,460	1,493
Fair value of plan assets	<b>8,719</b>	8,990	8,655	<b>153</b>	157	150
Surplus (deficit) and net defined benefit asset (liability)	<b>408</b>	144	(337)	<b>(960)</b>	(1,303)	(1,343)
Surplus (deficit) is comprised of:						
Funded or partially funded plans	<b>573</b>	339	(127)	<b>37</b>	28	7
Unfunded plans	<b>(165)</b>	(195)	(210)	<b>(997)</b>	(1,331)	(1,350)
Surplus (deficit) and net defined benefit asset (liability)	<b>408</b>	144	(337)	<b>(960)</b>	(1,303)	(1,343)

## Pension and Other Employee Future Benefit Expenses

Pension and other employee future benefit expenses are determined as follows:

(Canadian \$ in millions)	Pension benefit plans			Other employee future benefit plans		
	2018	2017	2016	2018	2017	2016
<b>Annual benefits expense</b>						
Current service cost	<b>210</b>	254	224	<b>26</b>	32	25
Net interest (income) expense on net defined benefit (asset) liability	<b>(10)</b>	7	(10)	<b>45</b>	47	52
Past service cost (income)	<b>7</b>	-	-	<b>(277)</b>	-	-
Administrative expenses	<b>5</b>	5	5	-	-	-
Remeasurement of other long-term benefits	-	-	-	<b>(10)</b>	(6)	6
Benefits expense	<b>212</b>	266	219	<b>(216)</b>	73	83
Canada and Quebec pension plan expense	<b>76</b>	75	73	-	-	-
Defined contribution expense	<b>153</b>	123	96	-	-	-
Total annual pension and other employee future benefit expenses recognized in the Consolidated Statement of Income	<b>441</b>	464	388	<b>(216)</b>	73	83

## Weighted-average Assumptions Used to Determine Benefit Expenses

	Pension benefit plans			Other employee future benefit plans		
	2018	2017	2016	2018	2017	2016
Discount rate at beginning of year (3)(4)	<b>3.5%</b>	3.4%	4.2%	<b>3.6%</b>	3.6%	4.4%
Rate of compensation increase	<b>2.4%</b>	2.8%	2.7%	<b>2.0%</b>	2.4%	2.4%
Assumed overall health care cost trend rate	<b>na</b>	na	na	<b>4.9%</b> (1)	5.2% (2)	5.3% (2)

(1) Trending to 4.1% in 2040 and remaining at that level thereafter.

(2) Trending to 4.5% in 2031 and remaining at that level thereafter.

(3) The pension benefit current service cost was calculated using a separate discount rate of 3.70% and 3.68% for 2018 and 2017, respectively.

(4) The other employee future benefit plans current service cost was calculated using a separate discount rate of 3.76% and 3.78% for 2018 and 2017, respectively.

na - not applicable

Assumptions regarding future mortality are based on published statistics and mortality tables calibrated to plan experience, when applicable. The current life expectancies underlying the amounts of the defined benefit obligations for our primary plans are as follows:

(Years)	Canada		United States	
	2018	2017	2018	2017
<b>Life expectancy for those currently age 65</b>				
Males	<b>23.7</b>	23.6	<b>21.9</b>	22.0
Females	<b>24.0</b>	24.0	<b>23.4</b>	23.4
<b>Life expectancy at age 65 for those currently age 45</b>				
Males	<b>24.6</b>	24.6	<b>23.1</b>	23.2
Females	<b>25.0</b>	24.9	<b>24.5</b>	24.6

Changes in the estimated financial positions of our defined benefit pension plans and other employee future benefit plans are as follows:

(Canadian \$ in millions, except as noted)	Pension benefit plans		Other employee future benefit plans	
	2018	2017	2018	2017
<b>Defined benefit obligation</b>				
Defined benefit obligation at beginning of year	8,846	8,992	1,460	1,493
Current service cost	210	254	26	32
Past service cost (income)	7	-	(277)	-
Interest cost	299	300	51	52
Benefits paid	(492)	(448)	(43)	(45)
Employee contributions	15	15	5	5
Actuarial (gains) losses due to:				
Changes in demographic assumptions	(50)	(127)	(31)	(107)
Changes in financial assumptions	(562)	(150)	(77)	(2)
Plan member experience	16	45	(4)	39
Foreign exchange and other	22	(35)	3	(7)
Defined benefit obligation at end of year	8,311	8,846	1,113	1,460
Wholly or partially funded defined benefit obligation	8,146	8,651	116	129
Unfunded defined benefit obligation	165	195	997	1,331
Total defined benefit obligation	8,311	8,846	1,113	1,460
<b>Weighted-average assumptions used to determine the defined benefit obligation</b>				
Discount rate at end of year	4.0%	3.5%	4.1%	3.6%
Rate of compensation increase	2.4%	2.4%	2.0%	2.0%
Assumed overall health care cost trend rate	na	na	4.9% (1)	5.2% (2)
<b>Fair value of plan assets</b>				
Fair value of plan assets at beginning of year	8,990	8,655	157	150
Interest income	309	293	6	5
Return on plan assets (excluding interest income)	(323)	277	(10)	8
Employer contributions	213	219	35	40
Employee contributions	15	15	5	5
Benefits paid	(492)	(448)	(43)	(45)
Administrative expenses	(5)	(5)	-	-
Foreign exchange and other	12	(16)	3	(6)
Fair value of plan assets at end of year	8,719	8,990	153	157
Surplus (deficit) and net defined benefit asset (liability) at end of year	408	144	(960)	(1,303)
<b>Recorded in:</b>				
Other assets	664	508	-	-
Other liabilities	(256)	(364)	(960)	(1,303)
Surplus (deficit) and net defined benefit asset (liability) at end of year	408	144	(960)	(1,303)
<b>Actuarial gains (losses) recognized in other comprehensive income</b>				
Net actuarial gains (losses) on plan assets	(323)	277	(10)	8
Actuarial gains (losses) on defined benefit obligation due to:				
Changes in demographic assumptions	50	127	30	104
Changes in financial assumptions	562	150	72	-
Plan member experience	(16)	(45)	1	(41)
Foreign exchange and other	6	(3)	-	-
<b>Actuarial gains recognized in other comprehensive income for the year</b>	279	506	93	71

(1) Trending to 4.1% in 2040 and remaining at that level thereafter.

(2) Trending to 4.5% in 2031 and remaining at that level thereafter.

na - not applicable

Our pension and other employee future benefit plan assets are measured at fair value on a recurring basis. The fair values of plan assets held by our primary plans as at October 31 are as follows:

(Canadian \$ in millions)	2018			2017		
	Quoted	Unquoted	Total	Quoted	Unquoted	Total
Cash and money market funds	114	-	114	150	5	155
Securities issued or guaranteed by:						
Canadian federal government	108	41	149	143	47	190
Canadian provincial and municipal governments	219	309	528	471	320	791
U.S. federal government	297	-	297	307	20	327
U.S. states, municipalities and agencies	-	12	12	-	16	16
Pooled funds	1,591	2,715	4,306	1,743	2,012	3,755
Derivative instruments	1	(14)	(13)	1	(29)	(28)
Corporate debt	6	1,055	1,061	9	1,251	1,260
Corporate equity	1,105	-	1,105	1,291	-	1,291
	3,441	4,118	7,559	4,115	3,642	7,757

Certain comparative figures have been reclassified to conform with the current year's presentation.

No plan assets are directly invested in the bank's or related parties' securities as at October 31, 2018 and 2017. As at October 31, 2018, our primary Canadian plan indirectly held, through pooled funds, approximately \$15 million (\$3 million in 2017) of our common shares. The plans do not hold any property we occupy or other assets we use.

The plans paid \$4 million in the year ended October 31, 2018 (\$4 million in 2017) to the bank and certain of our subsidiaries for investment management, record-keeping, custodial and administrative services rendered.

## Sensitivity of Assumptions

Key weighted-average assumptions used in measuring the defined benefit obligations for our primary plans are outlined in the following table. The sensitivity analysis provided in the table should be used with caution as it is hypothetical and the impact of changes in each key assumption may not be linear. The sensitivities to changes in each key variable have been calculated independently of the impact of changes in other key variables. Actual experience may result in simultaneous changes in a number of key assumptions, which would amplify or reduce certain sensitivities.

(Canadian \$ in millions, except as noted)	Defined benefit obligation	
	Pension benefit plans	Other employee future benefit plans
Discount rate (%)	4.0	4.1
Impact of: 1% increase (\$)	(811)	(102)
1% decrease (\$)	1,016	126
Rate of compensation increase (%)	2.4	2.0
Impact of: 0.25% increase (\$)	39	– (1)
0.25% decrease (\$)	(38)	– (1)
Mortality		
Impact of: 1 year shorter life expectancy (\$)	(138)	(23)
1 year longer life expectancy (\$)	135	23
Assumed overall health care cost trend rate (%)	na	4.9 (2)
Impact of: 1% increase (\$)	na	47
1% decrease (\$)	na	(48)

(1) The change in this assumption is immaterial.

(2) Trending to 4.1% in 2040 and remaining at that level thereafter.

na – not applicable

## Maturity Profile

The duration of the defined benefit obligation for our primary plans is as follows:

(Years)	2018	2017
Canadian pension plans	14.0	14.7
U.S. pension plans	7.2	8.0
Canadian other employee future benefit plans	14.3	16.5

## Cash Flows

Cash payments we made during the year in connection with our employee future benefit plans are as follows:

(Canadian \$ in millions)	Pension benefit plans			Other employee future benefit plans		
	2018	2017	2016	2018	2017	2016
Contributions to defined benefit plans	154	187	192	–	–	–
Contributions to defined contribution plans	153	123	96	–	–	–
Benefits paid directly to pensioners	59	32	43	35	40	38
	366	342	331	35	40	38

Our best estimate of the contributions we expect to make for the year ending October 31, 2019 is approximately \$246 million to our defined benefit pension plans and \$41 million to our other employee future benefit plans.

## Note 22: Income Taxes

We report our provision for income taxes in our Consolidated Statement of Income based upon transactions recorded in our consolidated financial statements regardless of when they are recognized for income tax purposes, with the exception of repatriation of retained earnings from our subsidiaries, as noted below.

In addition, we record an income tax expense or benefit in other comprehensive income or directly in shareholders' equity when the taxes relate to amounts recorded in other comprehensive income or shareholders' equity. For example, income tax expense (recovery) on hedging gains (losses) related to our net investment in foreign operations is recorded in our Consolidated Statement of Comprehensive Income as part of unrealized gains (losses) on translation of net foreign operations.

Current tax is the amount of income tax recoverable (payable) in respect of the taxable loss (profit) for a period. Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities for accounting and tax purposes. Deferred income tax assets and liabilities are measured at the tax rates expected to apply when temporary differences reverse. Changes in deferred income tax assets and liabilities related to a change in tax rates are recorded in income in the period the tax rate is substantively enacted, except to the extent that the tax arises from a transaction or event which is recognized either in other comprehensive income or directly in shareholders' equity. Current and deferred taxes are offset only when they are levied by the same taxing authority, levied on the same entity or group of entities and when there is a legal right to offset.

Included in deferred income tax assets is \$42 million (\$126 million in 2017) related to Canadian tax loss carryforwards that will expire in 2037, \$962 million (\$1,545 million in 2017) related to both U.S. tax loss carryforwards and tax credits that will expire in various amounts in U.S. taxation years from 2026 through 2038 and \$17 million (\$16 million in 2017) related to U.K. tax loss carryforwards that are available for use indefinitely against relevant profits generated in the U.K. On the evidence available, including management projections of income, we believe that it is probable there will be sufficient taxable income generated by our business operations to support these deferred tax assets. The amount of tax on temporary differences, unused tax losses and unused tax credits for which no deferred tax asset is recognized in our Consolidated Balance Sheet as at October 31, 2018 is \$132 million (\$282 million in 2017), of which \$8 million (\$53 million in 2017) is scheduled to expire within five years. Deferred tax assets have not been recognized in respect of these items because it is not probable that realization of these assets will occur.

Income that we earn through our foreign subsidiaries is generally taxed in the foreign country in which they operate. Income that we earn through our foreign branches is also generally taxed in the foreign country in which they operate. Canada also taxes the income we earn through foreign branches and a credit is allowed for certain foreign taxes paid on such income. Repatriation of earnings from certain foreign subsidiaries would require us to pay tax on certain of these earnings. As repatriation of such earnings is not planned in the foreseeable future, we have not recorded a related deferred income tax liability. The taxable temporary differences associated with the repatriation of earnings from investments in certain subsidiaries, branches, associates and interests in joint ventures for which deferred tax liabilities have not been recognized totalled \$13 billion as at October 31, 2018 (\$12 billion in 2017).

## Provision for Income Taxes

(Canadian \$ in millions)	2018	2017	2016
<b>Consolidated Statement of Income</b>			
Current			
Provision for income taxes for the current period	1,331	1,254	927
Adjustments in respect of current tax for prior periods	20	18	8
Deferred			
Origination and reversal of temporary differences	276	80	183
Effect of changes in tax rates	425	(2)	(2)
Previously unrecognized tax loss, tax credit or temporary difference for a prior period	(92)	(54)	(15)
	<b>1,960</b>	<b>1,296</b>	<b>1,101</b>
<b>Other Comprehensive Income and Shareholders' Equity</b>			
Income tax expense (recovery) related to:			
Unrealized gains (losses) on FVOCI securities (1)	(69)	21	64
Reclassification to earnings of (gains) on FVOCI securities (1)	(23)	(36)	(11)
Gains (losses) on derivatives designated as cash flow hedges	(432)	(322)	4
Reclassification to earnings of losses on derivatives designated as cash flow hedges	121	21	6
Hedging of unrealized (gains) losses on translation of net foreign operations	(56)	8	10
Gains (losses) on remeasurement of pension and other employee future benefit plans	111	157	(156)
(Losses) on remeasurement of own credit risk on financial liabilities designated at fair value	(6)	(53)	(55)
Share-based compensation	10	(12)	-
Total provision for income taxes	<b>1,616</b>	<b>1,080</b>	<b>963</b>

(1) Fiscal 2017 and prior years represent available-for-sale securities (Note 3).

Certain comparative figures have been reclassified to conform with the current year's presentation.

## Components of Total Provision for Income Taxes

(Canadian \$ in millions)	2018	2017	2016
Canada: Current income taxes			
Federal	501	470	434
Provincial	299	272	248
	<b>800</b>	<b>742</b>	<b>682</b>
Canada: Deferred income taxes			
Federal	(45)	2	(120)
Provincial	(27)	-	(67)
	<b>(72)</b>	<b>2</b>	<b>(187)</b>
Total Canadian	<b>728</b>	<b>744</b>	<b>495</b>
Foreign: Current income taxes	224	281	220
Deferred income taxes	664	55	248
Total foreign	<b>888</b>	<b>336</b>	<b>468</b>
Total provision for income taxes	<b>1,616</b>	<b>1,080</b>	<b>963</b>

Set out below is a reconciliation of our statutory tax rates and income taxes that would be payable at these rates to the effective income tax rates and provision for income taxes that we have recorded in our Consolidated Statement of Income:

(Canadian \$ in millions, except as noted)	2018	2017	2016
Combined Canadian federal and provincial income taxes at the statutory tax rate	1,971	1,768	1,525
Increase (decrease) resulting from:			
Tax-exempt income from securities	(226)	(409)	(367)
Foreign operations subject to different tax rates	(110)	22	13
Change in tax rate for deferred income taxes	425	(2)	(2)
Previously unrecognized tax loss, tax credit or temporary difference for a prior period	(92)	(54)	(15)
Income attributable to investments in associates and joint ventures	(39)	(103)	(47)
Adjustments in respect of current tax for prior periods	20	18	8
Other	11	56	(14)
Provision for income taxes and effective tax rate	<b>1,960</b>	<b>1,296</b>	<b>1,101</b>
	<b>26.6%</b>	<b>26.6%</b>	<b>26.6%</b>
	<b>26.5%</b>	<b>19.5%</b>	<b>19.2%</b>

## Components of Deferred Income Tax Balances

(Canadian \$ in millions)

Deferred Income Tax Asset (Liability) (1)	Net asset, November 1, 2017 (2)	Benefit (expense) to income statement	Benefit (expense) to equity	Translation and other	Net asset, October 31, 2018
Allowance for credit losses	684	(150)	-	(50)	484
Employee future benefits	416	(111)	(23)	-	282
Deferred compensation benefits	545	(50)	-	(1)	494
Other comprehensive income	50	-	138	7	195
Tax loss carryforwards	1,233	(628)	-	1	606
Tax credits	454	(39)	-	-	415
Premises and equipment	(664)	148	-	1	(515)
Pension benefits	(52)	19	(88)	-	(121)
Goodwill and intangible assets	(261)	60	-	-	(201)
Securities	21	17	-	-	38
Other	180	125	(10)	(9)	286
<b>Total</b>	<b>2,606</b>	<b>(609)</b>	<b>17</b>	<b>(51)</b>	<b>1,963</b>

(Canadian \$ in millions)

Deferred Income Tax Asset (Liability) (1)	Net asset, October 31, 2016	Benefit (expense) to income statement	Benefit (expense) to equity	Translation and other	Net asset, October 31, 2017
Allowance for credit losses	883	(118)	-	(55)	710
Employee future benefits	424	12	(14)	(6)	416
Deferred compensation benefits	462	102	-	(19)	545
Other comprehensive income	(82)	-	112	(3)	27
Tax loss carryforwards	1,343	(18)	-	(92)	1,233
Tax credits	407	64	-	(17)	454
Premises and equipment	(613)	(83)	-	32	(664)
Pension benefits	89	5	(143)	(3)	(52)
Goodwill and intangible assets	(253)	(23)	-	15	(261)
Securities	12	11	-	(2)	21
Other	187	24	12	(20)	203
<b>Total</b>	<b>2,859</b>	<b>(24)</b>	<b>(33)</b>	<b>(170)</b>	<b>2,632</b>

(1) Deferred tax assets of \$2,037 million and \$2,865 million and deferred tax liabilities of \$74 million and \$233 million as at October 31, 2018 and 2017, respectively, are presented on the balance sheet net by legal jurisdiction.

(2) Includes IFRS 9 adoption (refer to Note 28)

Certain comparative figures have been reclassified to conform with the current year's presentation.

In fiscal 2018, we were reassessed by the Canada Revenue Agency ("CRA") for additional income taxes and interest in an amount of approximately \$169 million in respect of certain 2013 Canadian corporate dividends. In prior fiscal years, we were reassessed for additional income taxes and interest of approximately \$116 million and \$76 million, respectively, for certain 2012 and 2011 Canadian corporate dividends. In its reassessments, the CRA denied dividend deductions on the basis that the dividends were received as part of a "dividend rental arrangement." The tax rules raised by the CRA in the reassessments were prospectively addressed in the 2015 and 2018 Canadian federal budgets. In the future, it is possible that we may be reassessed for significant income tax for similar activities in 2014 and subsequent years. We remain of the view that our tax filing positions were appropriate and intend to challenge any reassessment.

On December 22, 2017, the U.S. government enacted new tax legislation that became effective on January 1, 2018. Under the new legislation, our U.S. net deferred tax asset was revalued by \$483 million because of the lower income tax rate. The \$483 million revaluation is comprised of a \$425 million income tax expense recorded in our Consolidated Statement of Income, and a \$58 million income tax charge recorded in other comprehensive income and shareholders' equity for the year ended October 31, 2018.

## Note 23: Earnings Per Share

Basic earnings per share is calculated by dividing net income attributable to our shareholders, after deducting preferred share dividends, by the daily average number of fully paid common shares outstanding throughout the year.

Diluted earnings per share is calculated in the same manner, with further adjustments made to reflect the dilutive impact of instruments convertible into our common shares.



The following table presents our basic and diluted earnings per share:

<b>Basic Earnings per Share</b> (Canadian \$ in millions, except as noted)	2018	2017	2016
Net income attributable to bank shareholders	5,450	5,348	4,622
Dividends on preferred shares	(184)	(184)	(150)
Net income available to common shareholders	5,266	5,164	4,472
Weighted-average number of common shares outstanding (in thousands)	642,930	649,650	644,049
Basic earnings per share (Canadian \$)	8.19	7.95	6.94
<b>Diluted Earnings per Share</b>			
Net income available to common shareholders adjusted for impact of dilutive instruments	5,266	5,164	4,472
Weighted-average number of common shares outstanding (in thousands)	642,930	649,650	644,049
Effect of dilutive instruments			
Stock options potentially exercisable (1)	5,876	6,859	8,706
Common shares potentially repurchased	(3,893)	(4,548)	(6,629)
Weighted-average number of diluted common shares outstanding (in thousands)	644,913	651,961	646,126
Diluted earnings per share (Canadian \$)	8.17	7.92	6.92

(1) In computing diluted earnings per share, we excluded average stock options outstanding of 1,101,938, 1,330,564 and 1,353,464 with weighted-average exercise prices of \$127.45, \$182.70 and \$238.45 for the years ended October 31, 2018, 2017 and 2016, respectively, as the average share price for the period did not exceed the exercise price.

## Note 24: Commitments, Guarantees, Pledged Assets, Provisions and Contingent Liabilities

In the normal course of business, we enter into a variety of contracts under which we may be required to make payments to reimburse a counterparty for a loss if a third party does not perform according to the terms of a contract or does not make payments when due under the terms of a debt instrument, and contracts under which we provide indirect guarantees of the indebtedness of another party, all of which are considered guarantees.

Guarantees that qualify as derivatives are accounted for in accordance with the policy for derivative instruments (see Note 8). For guarantees that do not qualify as derivatives, the liability is initially recorded at fair value, which is generally the fee received. Subsequently, guarantees are recorded at the higher of the initial fair value, less amortization to recognize any fee income earned over the period, and our best estimate of the amount required to settle the obligation. Any change in the liability is reported in our Consolidated Statement of Income.

We enter into a variety of commitments, including off-balance sheet credit instruments, such as backstop liquidity facilities, securities lending, letters of credit, credit default swaps and commitments to extend credit, as a method of meeting the financial needs of our customers. These commitments include contracts where we may be required to make payments to a counterparty, based on changes in the value of an asset, liability or equity security that the counterparty holds, due to changes in an underlying interest rate, foreign exchange rate or other variable. The contractual amount of our commitments represents our maximum undiscounted potential exposure, before possible recoveries under recourse and collateral provisions. Collateral requirements for these instruments are consistent with collateral requirements for loans.

A large majority of these commitments expire without being drawn upon. As a result, the total contractual amounts may not be representative of the funding likely to be required for these commitments.

We strive to limit credit risk by dealing only with counterparties that we believe are creditworthy, and we manage our credit risk for these instruments using the same credit risk process that is applied to loans and other credit assets.

The maximum amount payable related to our various commitments is as follows:

(Canadian \$ in millions)	2018	2017
<b>Financial Guarantees</b>		
Standby letters of credit	18,458	18,126
Credit default swaps (1)	443	448
<b>Other Credit Instruments</b>		
Backstop liquidity facilities	5,627	5,044
Securities lending	4,939	5,336
Documentary and commercial letters of credit	1,263	1,030
Commitments to extend credit (2)	137,995	122,881
Other commitments	8,935	4,329
Total	177,660	157,194

(1) The fair value of the related derivatives included in our Consolidated Balance Sheet was \$8 million as at October 31, 2018 (\$6 million in 2017).

(2) Commitments to extend credit exclude personal lines of credit and credit cards that are unconditionally cancellable at our discretion.

### Financial Guarantees

Standby letters of credit represent our obligation to make payments to third parties on behalf of customers if they are unable to make the required payments or meet other contractual requirements. The majority have a term of one year or less. Collateral requirements for standby letters of credit and guarantees are consistent with our collateral requirements for loans. Standby letters of credit and guarantees include our guarantee of a subsidiary's debt directly provided to a third party.

Written credit default swaps require us to compensate a counterparty following the occurrence of a credit event in relation to a specified reference obligation, such as a bond or a loan. The terms of these contracts range from less than one year to 10 years. Refer to Note 8 for details.

## Other Credit Instruments

Backstop liquidity facilities are provided to asset-backed commercial paper ("ABCP") or commercial paper ("CP") programs administered by either us or third parties as an alternative source of financing when ABCP or CP markets cannot be accessed and for ABCP programs when predetermined performance measures of the financial assets held by these programs are not met. The terms of the backstop liquidity facilities do not require us to advance money to these programs in the event of insolvency of the borrower. The facilities' terms are generally no longer than one year, but can be several years.

We lend eligible customers' securities to third-party borrowers who have been evaluated for credit risk using the same credit risk process that is applied to loans and other credit assets. In connection with these activities, we may provide indemnification to clients against losses resulting from the failure of the borrower to return loaned securities when due. All borrowings are fully collateralized with cash or marketable securities. As securities are loaned, we require borrowers to maintain collateral which is equal to or in excess of 100% of the fair value of the securities borrowed. The collateral is revalued on a daily basis.

Documentary and commercial letters of credit represent our agreement to honour drafts presented by a third party upon completion of specific activities.

Commitments to extend credit represent our commitment to our customers to grant them credit in the form of loans or other financings for specific amounts and maturities, subject to their meeting certain conditions.

Other commitments include commitments to fund external private equity funds and investments in equity and debt securities at market value at the time the commitments are drawn. In addition, we act as underwriter for certain new issuances under which we, alone or together with a syndicate of financial institutions, purchase the new issue for resale to investors.

## Indemnification Agreements

In the normal course of operations, we enter into various agreements that provide general indemnifications. These indemnifications typically occur in connection with sales of assets, securities offerings, service contracts, membership agreements, clearing arrangements, derivative contracts and leasing transactions. Based on historical experience, we expect the risk of loss to be remote.

## Exchange and Clearinghouse Guarantees

We are a member of several securities and futures exchanges and central counterparties. Membership in certain of these organizations may require us to pay a pro rata share of the losses incurred by the organization in the event of default of another member. It is difficult to estimate our maximum exposure under these membership agreements, since this would require an assessment of future claims that may be made against us that have not yet occurred. Based on historical experience, we expect the risk of loss to be remote.

## Pledged Assets

In the normal course of business, we pledge assets as security for various liabilities that we incur.

The following tables summarize our pledged assets and collateral, and the activities to which they relate:

(Canadian \$ in millions)	2018	2017
<b>Bank Assets</b>		
Cash and securities (1)		
Issued or guaranteed by the Government of Canada	7,784	11,904
Issued or guaranteed by a Canadian province, municipality or school corporation	7,143	6,170
Other	60,812	51,848
Mortgages, securities borrowed or purchased under resale agreements and other	115,256	99,474
	<b>190,995</b>	<b>169,396</b>

(Canadian \$ in millions)	2018	2017
<b>Assets pledged in relation to:</b>		
Central counterparties, payment systems and depositories	2,403	2,043
Bank of Canada	525	725
Foreign governments and central banks	3	3
Obligations related to securities sold under repurchase agreements	54,606	42,450
Securities borrowing and lending	50,388	51,120
Derivatives transactions	6,120	5,924
Securitization	28,710	27,632
Covered bonds	26,721	24,983
Other	21,519	14,516
Total pledged assets and collateral (1)	<b>190,995</b>	<b>169,396</b>

(1) Excludes cash pledged with central banks disclosed as restricted cash in Note 2.

Certain comparative figures have been reclassified to conform with the current year's presentation.

## Collateral

When entering into trading activities, such as purchases under resale agreements, securities borrowing and lending activities or financing for certain derivative transactions, we require our counterparties to provide us with collateral that will protect us from losses in the event of their default. Collateral transactions (received or pledged) are typically conducted under terms that are usual and customary in standard trading activities. If there is no default, the securities or their equivalents must be returned to, or returned by, the counterparty at the end of the contract.

The fair value of counterparty collateral that we are permitted to sell or repledge (in the absence of default by the owner of the collateral) was \$123,782 million as at October 31, 2018 (\$118,324 million as at October 31, 2017). The fair value of collateral that we have sold or repledged was \$82,392 million as at October 31, 2018 (\$76,909 million as at October 31, 2017).

## Lease Commitments

We have entered into a number of non-cancellable leases for premises and equipment. Our computer and software leases are typically fixed for one term and our premises leases have various renewal options and rights. Our total contractual rental commitments as at October 31, 2018 were

\$2,742 million. The commitments for each of the next five years and thereafter are \$404 million for 2019, \$358 million for 2020, \$301 million for 2021, \$254 million for 2022, \$215 million for 2023 and \$1,210 million thereafter. Included in these amounts are commitments related to 1,130 leased branch locations as at October 31, 2018.

### Provisions and Contingent Liabilities

Provisions are recognized when we have a legal or constructive obligation as a result of past events, such as contractual commitments, legal or other obligations where we can reliably estimate the obligation, and it is probable we will be required to settle the obligation. We recognize as a provision our best estimate of the amount required to settle the obligations as of the balance sheet date, taking into account the risks and uncertainties surrounding the obligations. Provisions are recorded in other liabilities on the Consolidated Balance Sheet. Contingent liabilities are potential obligations arising from past events, the existence of which will only be confirmed by the occurrence or non-occurrence of one or more future events not wholly within our control and are not included in the table below.

#### Restructuring Charges

Included in provisions as at October 31, 2018 is \$176 million (\$98 million in 2017) of restructuring charges related to our ongoing enterprise-wide initiative to simplify how we work, drive increased efficiency, and invest in technology to move our business forward. This amount represents our best estimate of the amount that will be ultimately paid out.

#### Legal Proceedings

The bank and its subsidiaries are party to legal proceedings, including regulatory investigations, in the ordinary course of business. While there is inherent difficulty in predicting the outcome of these proceedings, management does not expect the outcome of any of these proceedings, individually or in the aggregate, to have a material adverse effect on the consolidated financial position or the results of operations of the bank.

Changes in the provision balance during the year were as follows:

(Canadian \$ in millions)	2018	2017
Balance at beginning of year	170	268
Additional provisions/increase in provisions	375	153
Provisions utilized	(250)	(172)
Amounts reversed	(11)	(75)
Exchange differences and other movements	-	(4)
Balance at end of year (1)	284	170

(1) Balance includes severance obligations, restructuring charges and legal provisions.

## Note 25: Operating and Geographic Segmentation

### Operating Groups

We conduct our business through three operating groups, each of which has a distinct mandate. We determine our operating groups based on our management structure and therefore these groups, and the results attributed to them, may not be comparable with those of other financial services companies. We evaluate the performance of our groups using reported and adjusted measures, such as net income, revenue growth, return on equity, and non-interest expense-to-revenue (productivity) ratio, as well as operating leverage.

Effective with the adoption of IFRS 9, we allocate the provision for credit losses on performing loans and the related allowance to operating groups. In 2017 and prior years, the collective provision and allowance were held in Corporate Services.

### Personal and Commercial Banking

Personal and Commercial Banking ("P&C") is comprised of two operating segments: Canadian Personal and Commercial Banking and U.S. Personal and Commercial Banking.

#### Canadian Personal and Commercial Banking

Canadian Personal and Commercial Banking ("Canadian P&C") provides a full range of financial products and services to eight million customers. Personal Banking provides financial solutions for everyday banking, financing, investing, credit card and creditor insurance needs. Commercial Banking provides our small business and commercial banking customers with a broad suite of integrated commercial and capital markets products, as well as financial advisory services.

#### U.S. Personal and Commercial Banking

U.S. Personal and Commercial Banking ("U.S. P&C") offers a broad range of products and services. Our retail and small and mid-sized business banking customers are served through our branches, contact centres, online and mobile banking platforms and automated banking machines across eight states. Our commercial banking customers are offered in-depth specific industry knowledge, as well as strategic capital markets solutions.

### BMO Wealth Management

BMO's group of wealth management businesses serves a full range of client segments from mainstream to ultra high net worth and institutional, with a broad offering of wealth management products and services, including insurance products. Wealth Management ("BMO WM") is a global business with an active presence in markets across Canada, the United States, Europe and Asia.

## BMO Capital Markets

BMO Capital Markets (“BMO CM”) is a North American-based financial services provider offering a complete range of products and services to corporate, institutional and government clients. Through our Investment and Corporate Banking and Trading Products lines of business, we operate in 33 locations around the world, including 19 offices in North America.

## Corporate Services

Corporate Services consists of Corporate Units and Technology and Operations (“T&O”). Corporate Units provide enterprise-wide expertise, governance and support in a variety of areas, including strategic planning, risk management, finance, legal and regulatory compliance, human resources, communications, marketing, real estate, procurement, data and analytics, and innovation. T&O manages, maintains and provides governance of information technology, cyber security, and operations services for the bank.

The costs of these Corporate Units and T&O services are largely transferred to the three operating groups (P&C, BMO WM and BMO CM), with any remaining amounts retained in Corporate Services results. As such, Corporate Services results largely reflect the impact of residual treasury-related activities, the elimination of taxable equivalent adjustments, residual unallocated expenses and certain acquisition integration costs and restructuring costs.

## Basis of Presentation

The results of these operating groups are based on our internal financial reporting systems. The accounting policies used in these segments are generally consistent with those followed in the preparation of our consolidated financial statements, as disclosed in Note 1 and throughout the consolidated financial statements. Income taxes presented below may not be reflective of taxes paid in each jurisdiction where we operate. Income taxes are generally applied to each segment based on a statutory tax rate and may be adjusted for items and activities specific to each segment. A notable accounting measurement difference is the taxable equivalent basis adjustment as described below.

Periodically, certain business lines and units within the business lines are transferred between client and corporate support groups to more closely align our organizational structure with our strategic priorities. In addition, revenue and expense allocations are updated to more accurately align with current experience. Results for prior periods are restated to conform with the current year’s presentation.

### Taxable Equivalent Basis

We analyze revenue on a taxable equivalent basis (“teb”) at the operating group level. Revenue and the provision for income taxes are increased on tax-exempt securities to an equivalent before-tax basis to facilitate comparisons of income between taxable and tax-exempt sources. The offset to the groups’ teb adjustments is reflected in Corporate Services revenue and provision for income taxes. The teb adjustment for the year ended October 31, 2018 was \$313 million (\$567 million in 2017 and \$510 million in 2016).

### Inter-Group Allocations

Various estimates and allocation methodologies are used in the preparation of the operating groups’ financial information. Overhead expenses are allocated to operating groups using allocation formulas applied on a consistent basis. Operating group net interest income reflects internal funding charges and credits on the groups’ assets, liabilities and capital, at market rates, taking into account relevant terms and currency considerations. The offset of the net impact of these charges and credits is reflected in Corporate Services. These inter-group allocations are also applied to the geographical segmentation.

Our results and average assets, grouped by operating segment, are as follows:

(Canadian \$ in millions)	Canadian P&C	U.S. P&C	Wealth Management	BMO CM	Corporate Services (1)	Total
<b>2018</b>						
Net interest income (2)	5,541	3,843	826	659	(556)	10,313
Non-interest revenue	2,171	1,140	5,468	3,696	249	12,724
Total Revenue	7,712	4,983	6,294	4,355	(307)	23,037
Provision for (recovery of) credit losses on impaired loans	466	258	6	(17)	(13)	700
Provision for (recovery of) credit losses on performing loans	3	(38)	-	(1)	(2)	(38)
Total provision for (recovery of) credit losses	469	220	6	(18)	(15)	662
Insurance claims, commissions and changes in policy benefit liabilities	-	-	1,352	-	-	1,352
Amortization	318	454	231	124	-	1,127
Non-interest expense	3,487	2,558	3,278	2,727	436	12,486
Income (loss) before taxes and non-controlling interest in subsidiaries	3,438	1,751	1,427	1,522	(728)	7,410
Provision for (recovery of) income taxes	884	357	355	366	(2)	1,960
Reported net income (loss)	2,554	1,394	1,072	1,156	(726)	5,450
Non-controlling interest in subsidiaries	-	-	-	-	-	-
Net Income (loss) attributable to bank shareholders	2,554	1,394	1,072	1,156	(726)	5,450
Average Assets	224,553	110,351	35,913	307,087	76,391	754,295

(Canadian \$ in millions)	Canadian P&C	U.S. P&C	Wealth Management	BMO CM	Corporate Services (1)	Total
<b>2017</b>						
Net interest income (2)	5,261	3,551	722	1,233	(760)	10,007
Non-interest revenue	2,182	1,066	5,492	3,336	177	12,253
<b>Total Revenue</b>	<b>7,443</b>	<b>4,617</b>	<b>6,214</b>	<b>4,569</b>	<b>(583)</b>	<b>22,260</b>
Provision for (recovery of) credit losses (3)	483	289	8	44	(78)	746
Insurance claims, commissions and changes in policy benefit liabilities	-	-	1,538	-	-	1,538
Amortization	309	434	241	119	-	1,103
Non-interest expense	3,313	2,510	3,110	2,659	635	12,227
Income (loss) before taxes and non-controlling interest in subsidiaries	3,338	1,384	1,317	1,747	(1,140)	6,646
Provision for (recovery of) income taxes	827	357	350	472	(710)	1,296
<b>Reported net income (loss)</b>	<b>2,511</b>	<b>1,027</b>	<b>967</b>	<b>1,275</b>	<b>(430)</b>	<b>5,350</b>
Non-controlling interest in subsidiaries	-	-	2	-	-	2
<b>Net Income (loss) attributable to bank shareholders</b>	<b>2,511</b>	<b>1,027</b>	<b>965</b>	<b>1,275</b>	<b>(430)</b>	<b>5,348</b>
<b>Average Assets</b>	<b>217,685</b>	<b>104,209</b>	<b>32,562</b>	<b>302,518</b>	<b>65,652</b>	<b>722,626</b>

(Canadian \$ in millions)	Canadian P&C	U.S. P&C	Wealth Management	BMO CM	Corporate Services (1)	Total
<b>2016</b>						
Net interest income (2)	5,080	3,491	635	1,459	(793)	9,872
Non-interest revenue	1,909	1,119	5,274	2,855	58	11,215
<b>Total Revenue</b>	<b>6,989</b>	<b>4,610</b>	<b>5,909</b>	<b>4,314</b>	<b>(735)</b>	<b>21,087</b>
Provision for (recovery of) credit losses (3)	506	249	9	81	(74)	771
Insurance claims, commissions and changes in policy benefit liabilities	-	-	1,543	-	-	1,543
Amortization	276	433	233	105	-	1,047
Non-interest expense	3,224	2,481	3,104	2,469	716	11,994
Income (loss) before taxes and non-controlling interest in subsidiaries	2,983	1,447	1,020	1,659	(1,377)	5,732
Provision for (recovery of) income taxes	766	396	245	424	(730)	1,101
<b>Reported net income (loss)</b>	<b>2,217</b>	<b>1,051</b>	<b>775</b>	<b>1,235</b>	<b>(647)</b>	<b>4,631</b>
Non-controlling interest in subsidiaries	-	-	2	-	7	9
<b>Net Income (loss) attributable to bank shareholders</b>	<b>2,217</b>	<b>1,051</b>	<b>773</b>	<b>1,235</b>	<b>(654)</b>	<b>4,622</b>
<b>Average Assets</b>	<b>208,018</b>	<b>106,111</b>	<b>30,642</b>	<b>301,623</b>	<b>60,728</b>	<b>707,122</b>

(1) Corporate Services includes Technology and Operations.

(2) Operating groups report on a taxable equivalent basis – see Basis of Presentation section.

(3) 2017 and 2016 have not been restated to reflect the adoption of IFRS 9.

Certain comparative figures have been reclassified to conform with the current year's presentation.

### Geographic Information

We operate primarily in Canada and the United States, but we also have operations in the United Kingdom, Europe, the Caribbean and Asia, which are grouped in other countries. We allocate our results by geographic region based on the location of the unit responsible for managing the related assets, liabilities, revenues and expenses.

Our results and average assets, grouped by geographic region, are as follows:

(Canadian \$ in millions)	Canada	United States	Other countries	Total
<b>2018</b>				
Total Revenue	<b>13,733</b>	<b>7,315</b>	<b>1,989</b>	<b>23,037</b>
Income before taxes and non-controlling interest in subsidiaries	<b>4,838</b>	<b>1,870</b>	<b>702</b>	<b>7,410</b>
Reported net income	<b>3,795</b>	<b>1,099</b>	<b>556</b>	<b>5,450</b>
Average Assets	<b>441,376</b>	<b>277,764</b>	<b>35,155</b>	<b>754,295</b>

(Canadian \$ in millions)	Canada	United States	Other countries	Total
<b>2017</b>				
Total Revenue	13,469	7,073	1,718	22,260
Income before taxes and non-controlling interest in subsidiaries	4,597	1,588	461	6,646
Reported net income	3,817	1,210	323	5,350
Average Assets	430,570	264,473	27,583	722,626

(Canadian \$ in millions)	Canada	United States	Other countries	Total
<b>2016</b>				
Total Revenue	12,868	6,796	1,423	21,087
Income before taxes and non-controlling interest in subsidiaries	3,902	1,499	331	5,732
Reported net income	3,286	1,105	240	4,631
Average Assets	420,155	260,018	26,949	707,122

Certain comparative figures have been reclassified to conform with the current year's presentation.

## Note 26: Significant Subsidiaries

As at October 31, 2018, the bank, either directly or indirectly through its subsidiaries, controls the following significant operating subsidiaries.

Significant subsidiaries (1)(2)	Head or principal office	Book value of shares owned by the bank (Canadian \$ in millions)
Bank of Montreal Capital Markets (Holdings) Limited and subsidiaries, including:	London, England	332
BMO Capital Markets Limited	London, England	
Pyrford International Limited	London, England	
Bank of Montreal (China) Co. Ltd.	Beijing, China	448
Bank of Montreal Holding Inc. and subsidiaries, including:	Toronto, Canada	29,028
Bank of Montreal Mortgage Corporation	Calgary, Canada	
BMO Mortgage Corp.	Vancouver, Canada	
BMO Investments Limited	Hamilton, Bermuda	
BMO Reinsurance Limited	St. Michaels, Barbados	
BMO Nesbitt Burns Holdings Corporation	Toronto, Canada	
BMO Nesbitt Burns Inc.	Toronto, Canada	
BMO Investments Inc.	Toronto, Canada	
BMO InvestorLine Inc.	Toronto, Canada	
Bank of Montreal Ireland plc	Dublin, Ireland	1,022
BMO Financial Corp. and subsidiaries, including:	Chicago, United States	21,893
BMO Asset Management Corp. and subsidiaries	Chicago, United States	
BMO Capital Markets Corp.	New York, United States	
BMO Harris Bank National Association and subsidiaries, including:	Chicago, United States	
BMO Harris Investment Company LLC	Las Vegas, United States	
BMO Harris Financial Advisors, Inc.	Chicago, United States	
BMO Harris Financing, Inc. and subsidiaries	Chicago, United States	
CTC myCFO, LLC	Palo Alto, United States	
BMO Global Asset Management (Europe) Limited and subsidiaries, including:	London, England	692
BMO Asset Management (Holdings) plc and subsidiaries (3)	London, England	
BMO Life Insurance Company and subsidiaries, including:	Toronto, Canada	1,195
BMO Life Holdings (Canada), ULC	Halifax, Canada	
BMO Life Assurance Company	Toronto, Canada	
BMO Trust Company	Toronto, Canada	768
BMO Trustee Asia Limited	Hong Kong, China	2
LGM (Bermuda) Limited and subsidiaries, including:	Hamilton, Bermuda	147
BMO Global Asset Management (Asia) Limited	Hong Kong, China	
LGM Investments Limited	London, England	

(1) Each subsidiary is incorporated or organized under the laws of the state or country in which the principal office is situated, except for BMO Financial Corp., BMO Asset Management Corp., BMO Capital Markets Corp., BMO Harris Financial Advisors, Inc., BMO Harris Financing, Inc., and CTC myCFO, LLC, which are incorporated under the laws of the state of Delaware, United States. BMO Asset Management (Holdings) plc is incorporated under the laws of Scotland.

(2) Unless otherwise noted, the bank, either directly or indirectly through its subsidiaries, owns 100% of the outstanding voting shares of each subsidiary.

(3) Effective October 31, 2018, F&C Asset Management plc changed its name to BMO Asset Management (Holdings) plc.

### Significant Restrictions

Our ability to transfer funds between our subsidiaries may be restricted by statutory, contractual, capital and regulatory requirements. Restrictions include:

- Assets pledged as security for various liabilities we incur. Refer to Note 24 for details.
- Assets of our consolidated structured entities that are held for the benefit of the note holders. Refer to Note 7 for details.
- Assets held by our insurance subsidiaries. Refer to Note 12 for details.
- Regulatory and statutory requirements that reflect capital and liquidity requirements. Refer to Note 19 for details.
- Funds required to be held with central banks. Refer to Note 2 for details.

## Note 27: Related Party Transactions

Related parties include subsidiaries, associates, joint ventures, employee future benefit plans and key management personnel and their close family members. Close family members include spouses, common-law partners and dependent minors. Transactions with our subsidiaries are eliminated on consolidation, and are not disclosed as related party transactions.

### Key Management Personnel Compensation

Key management personnel is defined as those persons having authority and responsibility for planning, directing and/or controlling the activities of an entity, being the members of our Board of Directors ("directors") and certain senior executives.

The following table presents the compensation of our key management personnel:

(Canadian \$ in millions)	2018	2017	2016
Base salary and incentives	21	23	22
Post-employment benefits	2	1	2
Share-based payments (1)	31	38	32
<b>Total key management personnel compensation</b>	<b>54</b>	<b>62</b>	<b>56</b>

(1) Amounts included in share-based payments are the fair values of awards granted in the year.

We offer senior executives market interest rates on credit card balances, a fee-based subsidy on annual credit card fees, and a select suite of customer loan and mortgage products at rates normally accorded to preferred customers. At October 31, 2018, loans to key management personnel totalled \$16 million (\$10 million in 2017).

Directors receive a specified amount of their annual retainer in deferred stock units. Until a director's shareholdings (including deferred stock units) are eight times greater than their annual retainer, they are required to take 100% of their annual retainer and other fees in the form of either our common shares or deferred stock units. They may elect to receive the remainder of such retainer fees and other remuneration in cash, common shares or deferred stock units.

Directors of our wholly owned subsidiary, BMO Financial Corp., are required to take a specified minimum amount of their annual retainer and other fees in the form of deferred stock units.

## Joint Ventures and Associates

We provide banking services to our joint ventures and associates on the same terms offered to our customers for these services. Our investments in joint ventures of which we own 50% totalled \$231 million as at October 31, 2018 (\$182 million in 2017). Our investments in associates over which we exert significant influence totalled \$471 million as at October 31, 2018 (\$444 million in 2017).

The following table presents transactions with our joint ventures and associates:

(Canadian \$ in millions)	2018	2017
Loans	195	178
Deposits	114	132
Fees paid for services received	71	66

## Note 28: Transition to IFRS 9

The following table shows the pre-transition IAS 39 and corresponding IFRS 9 classification and measurement categories, and reconciles the IAS 39 and IFRS 9 carrying amounts for loans, securities and other financial assets as at November 1, 2017 as a result of adopting IFRS 9. There were no changes to the measurement basis of other financial asset categories or any financial liabilities.

(Canadian \$ in millions)	IAS 39 measurement category	IFRS 9 measurement category	IAS 39 carrying amount	Reclassification	Remeasurement	IFRS 9 carrying amount
<b>Financial Assets</b>						
<b>Securities</b>						
	Trading	Trading	99,069	(8,534)	-	90,535
		FVTPL	-	8,534	-	8,534
	Available-for-sale	na	54,075	(54,075)	-	-
		FVOCI	-	51,909	-	51,909
		FVTPL	-	2,081	-	2,081
		Amortized cost	-	85	-	85
	Held-to-maturity	Amortized cost	9,094	-	(2)	9,092
	Other	Other	960	(333)	-	627
		FVTPL	-	333	-	333
Total Securities			163,198	-	(2)	163,196
<b>Loans</b>						
Residential mortgages	Amortized cost	Amortized cost	115,258	-	-	115,258
Consumer instalment and other	Amortized cost	Amortized cost	61,944	-	-	61,944
Credit cards	Amortized cost	Amortized cost	8,071	-	-	8,071
Business and government	Amortized cost	Amortized cost	175,067	(2,372)	-	172,695
		FVTPL	-	2,372	-	2,372
Total Loans			360,340	-	-	360,340
Allowance for credit losses			(1,833)	-	154	(1,679)
			358,507	-	154	358,661
Remaining financial assets (1)			127,706	-	(6)	127,700
<b>Financial Liabilities</b>						
Allowance for credit losses on off-balance sheet exposures			163	-	76	239
<b>Total pre-tax impact of IFRS 9 adoption</b>			na	-	70	na
<b>Total after-tax Accumulated Other Comprehensive Income</b>			3,066	(55)	-	3,011
<b>Total after-tax Retained Earnings (2)(3)</b>			23,709	55	44	23,808
<b>Total after-tax Shareholders' Equity</b>			44,354	-	44	44,398

(1) Represents cash and cash equivalents, interest bearing deposits with banks, securities borrowed or purchased under resale agreements and other assets. Remeasurement represents the impact of the impairment provisions of IFRS 9 on these remaining financial assets.

(2) Reclassification amount represents the after-tax impact (\$105 million pre-tax) that resulted from the reclassification of equity securities from available-for-sale under IAS 39 to fair value through profit or loss under IFRS 9.

(3) Remeasurement represents the after-tax impact (\$70 million pre-tax) of the adoption of the impairment provisions of IFRS 9.

na - not applicable due to IFRS 9 adoption.



The securities balances by measurement category following the adoption of IFRS 9 as at November 1, 2017 were:

(Canadian \$ in millions)	November 1, 2017
Trading	90,535
FVTPL	10,948
FVOCI	51,909
Amortized cost	9,177
Other	627
<b>Total</b>	<b>163,196</b>

The primary impact as a result of adopting the classification and measurement provisions of IFRS 9 relates to securities held by the bank.

On transition, our existing held-to-maturity securities continued to qualify for amortized cost treatment, as they are held with the intent to collect contractual cash flows and those cash flows represent solely payments of principal and interest.

Our available-for-sale portfolio was reclassified based on the result of the business model and contractual cash flow tests. All available-for-sale securities that represented equity instruments were reclassified as fair value through profit or loss. Available-for-sale securities that represented investments in debt instruments were generally classified as fair value through other comprehensive income. Certain available-for-sale debt securities were classified as fair value through profit or loss, as their contractual cash flows did not represent solely payments of principal and interest. Certain available-for-sale debt securities were classified as amortized cost, as they are held with the intent to collect contractual cash flows and those cash flows represent only payments of principal and interest. On transition, investments held in our merchant banking business are classified as fair value through profit or loss and no longer require designation under the fair value option.

Our lending portfolios continue to be recorded at amortized cost, with the exception of certain business and government loans, whose contractual cash flows did not represent only payments of principal and interest, and were classified as fair value through profit or loss.

The following table illustrates the impact of transition to IFRS 9 on the allowance for credit loss as of November 1, 2017.

(Canadian \$ in millions)	IAS 39 collective allowance	IAS 39 specific allowance	IAS 39 allowance	Remeasurement	IFRS 9 allowance	IFRS 9 Stage 1	IFRS 9 Stage 2	IFRS 9 Stage 3
Loans								
Residential mortgages	69	24	<b>93</b>	(20)	<b>73</b>	16	33	24
Consumer instalment and other	343	136	<b>479</b>	71	<b>550</b>	70	344	136
Credit cards	243	-	<b>243</b>	41	<b>284</b>	63	221	-
Business and government	785	233	<b>1,018</b>	(246)	<b>772</b>	205	334	233
<b>Total allowance for credit losses</b>	<b>1,440</b>	<b>393</b>	<b>1,833</b>	<b>(154)</b>	<b>1,679</b>	<b>354</b>	<b>932</b>	<b>393</b>
Allowance for credit losses on remaining financial assets (1)	-	-	-	8	<b>8</b>	7	1	-
Allowance for credit losses on off-balance sheet exposures	136	27	<b>163</b>	76	<b>239</b>	89	123	27
<b>Total</b>	<b>1,576</b>	<b>420</b>	<b>1,996</b>	<b>(70)</b>	<b>1,926</b>	<b>450</b>	<b>1,056</b>	<b>420</b>

(1) Represents cash and cash equivalents, interest bearing deposits with banks, securities, securities borrowed or purchased under resale agreements and other assets.

### Accounting Policies for Financial Instruments under IAS 39, *Financial Instruments: Recognition and Measurement*

The following accounting policies apply to comparative information for 2017 and 2016 in our consolidated financial statements as we did not restate prior periods on adoption of IFRS 9.

#### Classification and Measurement of Securities

Securities are divided into four types: trading securities designated at FVTPL, available-for-sale securities, held-to-maturity and other securities.

**Trading securities** are securities that we purchase for resale over a short period of time. We classify trading securities and securities designated under the fair value option at fair value through profit or loss.

We record the transaction costs, gains and losses realized on disposal and unrealized gains and losses due to changes in fair value in our Consolidated Statement of Income in trading revenues. Securities designated at FVTPL are financial instruments that are accounted for at fair value, with changes in fair value recorded in income provided they meet certain criteria.

**Available-for-sale securities** consist of debt and equity securities that may be sold in response to or in anticipation of changes in interest rates and resulting prepayment risk, changes in credit risk, changes in foreign currency risk, changes in funding sources or terms, or in order to meet liquidity needs.

Available-for-sale securities are initially recorded at fair value plus transaction costs. They are subsequently measured at fair value, with unrealized gains and losses recorded in unrealized gains (losses) on available-for-sale securities in our Consolidated Statement of Comprehensive Income until the security is sold. Gains and losses on disposal and impairment losses (recoveries) are recorded in our Consolidated Statement of Income in non-interest revenue, securities gains, other than trading. Interest income earned and dividends received on available-for-sale securities are recorded in our Consolidated Statement of Income in interest, dividend and fee income, securities.

**Held-to-maturity securities** are debt securities that we have the intention and ability to hold to maturity and that do not meet the definition of a loan. These securities are initially recorded at fair value plus transaction costs and subsequently measured at amortized cost using the effective interest method. Impairment losses are recorded in our Consolidated Statement of Income in securities gains (losses), other than trading. Interest income earned and amortization of premiums or discounts on these debt securities are recorded in our Consolidated Statement of Income in interest, dividend and fee income, securities.

**Other securities** are investments in companies where we exert significant influence over operating, investing and financing decisions (generally companies in which we own between 20% and 50% of the voting shares). We account for these other securities using the equity method of accounting. Other securities also include certain securities held by our merchant banking business.

#### *Impairment of Securities*

We review held-to-maturity, available-for-sale and other securities at each quarter-end reporting period to identify and evaluate investments that show indications of possible impairment.

For held-to-maturity, available-for-sale and other securities, impairment losses are recognized if there is objective evidence of impairment as a result of an event that reduces the estimated future cash flows from the security and the impact can be reliably estimated.

We do not record impairment write-downs on debt securities when impairment is due to changes in market interest rates if future contractual cash flows associated with the debt security are still expected to be recovered.

The impairment loss on available-for-sale securities is the difference between the security's amortized cost and its current fair value, less any previously recognized impairment losses. If there is objective evidence of impairment, a write-down is transferred from our Consolidated Statement of Comprehensive Income, unrealized gains (losses) on available-for-sale securities, to our Consolidated Statement of Income in securities gains, other than trading.

The impairment loss on held-to-maturity securities is the difference between a security's carrying amount and the present value of its estimated future cash flows discounted at the original effective interest rate. If there is objective evidence of impairment, a write-down is recorded in our Consolidated Statement of Income in securities gains, other than trading.

For available-for-sale debt securities, a previous impairment loss is reversed through net income if an event occurs after the impairment was recognized that can be objectively attributed to an increase in fair value, to a maximum of the original impairment charge. For available-for-sale equity securities, previous impairment losses are not reversed through net income, and any subsequent increases in fair value are recorded in other comprehensive income. Reversals of impairment losses on held-to-maturity securities are recorded to a maximum of the amortized cost of the investment before the original impairment charge.

#### *Loans*

Loans are initially measured at fair value plus directly attributable costs, and are subsequently measured at amortized cost using the effective interest method. The effective interest method allocates interest income over the expected term of the loan by applying the effective interest rate to the carrying amount of the loan. The effective interest rate is defined as the rate that exactly discounts future cash receipts through the expected term of the loan to the net carrying amount of the loan. Under the effective interest method, the amount recognized in interest, dividend and fee income, loans, varies over the term of the loan based on the principal outstanding.

#### *Allowance for Credit Losses*

The allowance for credit losses adjusts the value of loans to reflect their estimated realizable value. In assessing their estimated realizable value, we must rely on estimates and exercise judgment regarding matters for which the ultimate outcome is unknown. These include economic factors, developments affecting companies in particular industries, and specific issues with respect to single borrowers. Changes in circumstances may cause future assessments of credit risk to be materially different from current assessments, which could result in an increase or decrease in the allowance for credit losses.

The allowance is comprised of a specific allowance and a collective allowance.

#### *Specific Allowance*

These allowances are recorded for individually identified impaired loans to reduce their carrying value to the expected recoverable amount. We review our loans on an ongoing basis to assess whether any loans should be classified as impaired and whether an allowance or write-off should be recorded (excluding credit card loans, which are classified as impaired and written off when principal or interest payments are 180 days past due, as discussed under Impaired Loans). The review of individually significant problem loans is conducted at least quarterly by the account managers, each of whom assesses the ultimate collectability and estimated recoveries for a specific loan based on all events and conditions that are relevant to the loan. This assessment is then reviewed and approved by an independent credit officer.

#### **Individually Significant Impaired Loans**

To determine the amount we expect to recover from an individually significant impaired loan, we use the value of the estimated future cash flows discounted at the loan's original effective interest rate. The determination of estimated future cash flows of a collateralized impaired loan reflects the expected realization of the underlying security, net of expected costs and any amounts legally required to be paid to the borrower. Security can vary by type of loan and may include cash, securities, real estate properties, accounts receivable, guarantees, inventory or other capital assets.

#### **Individually Insignificant Impaired Loans**

Residential mortgages, consumer instalment and other personal loans are individually insignificant and may be individually assessed or collectively assessed for losses at the time of impairment, taking into account historical loss experience.

#### *Collective Allowance*

We maintain a collective allowance in order to cover impairment in the existing portfolio for loans that have not yet been individually identified as impaired. Our approach to establishing and maintaining the collective allowance is based on the requirements of IAS 39, considering guidelines issued by OSFI.

The collective allowance methodology incorporates both quantitative and qualitative factors to determine an appropriate level for the collective allowance. For the purpose of calculating the collective allowance, we group loans on the basis of similarities in credit risk characteristics. The loss factors for groups of loans are determined based on a minimum of five years of historical data and a one-year loss emergence period, except for credit cards, where a seven-month loss emergence period is used. The loss factors are back-tested and calibrated on a regular basis to ensure that they continue to reflect our best estimate of losses that have been incurred but not yet identified, on an individual basis, within the pools of loans. Historical loss experience data is also reviewed in the determination of loss factors. Qualitative factors are based on current observable data, such as current macroeconomic and business conditions, portfolio-specific considerations and model risk factors.