

Notes to the Consolidated Financial Statements

(Amounts in millions of Canadian dollars except for per share amounts and where otherwise stated. All amounts stated in U.S. dollars are in millions.)

1. Significant Accounting Policies

Description of Business

Sun Life Financial Inc. ("SLF Inc.") is a publicly traded company domiciled in Canada and is the holding company of Sun Life Assurance Company of Canada ("Sun Life Assurance"). Both companies are incorporated under the *Insurance Companies Act* (Canada), and are regulated by the Office of the Superintendent of Financial Institutions, Canada ("OSFI"). SLF Inc. and its subsidiaries are collectively referred to as "us", "our", "ours", "we", or "the Company". We are an internationally diversified financial services organization providing savings, retirement and pension products, and life and health insurance to individuals and groups through our operations in Canada, the United States ("U.S."), Asia, and the United Kingdom ("UK"). We also operate mutual fund and investment management businesses, primarily in Canada, the U.S., and Asia.

Statement of Compliance

We prepared our Consolidated Financial Statements in accordance with International Financial Reporting Standards ("IFRS") as issued and adopted by the International Accounting Standards Board ("IASB"). Our accounting policies have been applied consistently within our Consolidated Financial Statements.

Basis of Presentation

Our Consolidated Statements of Financial Position are presented in the order of liquidity and each statement of financial position line item includes both current and non-current balances, as applicable.

We have defined our reportable business segments and the amounts disclosed for those segments based on our management structure and the manner in which our internal financial reporting is conducted. Transactions between segments are executed and priced on an arm's-length basis in a manner similar to transactions with third parties.

The significant accounting policies used in the preparation of our Consolidated Financial Statements are summarized below and are applied consistently by us.

Estimates, Assumptions and Judgments

The application of our accounting policies requires estimates, assumptions and judgments as they relate to matters that are inherently uncertain. We have established procedures to ensure that our accounting policies are applied consistently and that the processes for changing methodologies for determining estimates are controlled and occur in an appropriate and systematic manner.

Use of Estimates and Assumptions

The preparation of our Consolidated Financial Statements requires us to make estimates and assumptions that affect the application of our policies and the reported amounts of assets, liabilities, revenue and expenses. Key sources of estimation uncertainty include the measurement of insurance contract liabilities and investment contract liabilities, determination of fair value, impairment of financial instruments, determination and impairment of goodwill and intangible assets, determination of provisions and liabilities for pension plans, other post-retirement benefits, income taxes, and the determination of fair value of share-based payments. Actual results may differ from our estimates thereby impacting our Consolidated Financial Statements. Information on our use of estimates and assumptions are discussed in this Note.

Judgments

In preparation of these Consolidated Financial Statements, we use judgments to select assumptions and determine estimates as described above. We also use judgment when applying accounting policies and when determining the classification of insurance contracts, investment contracts and service contracts; the substance of whether our relationship with a structured entity, subsidiary, joint venture or associate constitutes control, joint control or significant influence; functional currencies; contingencies; acquisitions; deferred income tax assets; and the determination of cash generating unit ("CGU").

Significant estimates and judgments have been made in the following areas and are discussed as noted:

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Basis of Consolidation

Our Consolidated Financial Statements include the results of operations and the financial position of subsidiaries, which includes structured entities controlled by us, after intercompany balances and transactions have been eliminated. Subsidiaries are fully consolidated from the date we obtain control, and deconsolidated on the date control ceases. The acquisition method is used to account for the acquisition of a subsidiary from an unrelated party at the date that control is obtained, with the difference between the consideration transferred and the fair value of the subsidiary's net identifiable assets acquired recorded as goodwill. Judgment is required to determine fair value of the net identifiable assets acquired in a business combination.

We control an entity when we have power over an entity, exposure to or rights to variable returns from our involvement with an entity, and the ability to affect our returns through our power over an entity. Power exists when we have rights that give us the ability to direct the relevant activities, which are those activities that could significantly affect the entity's returns. Power can be obtained through voting rights or other contractual arrangements. Judgment is required to determine the relevant activities and which party has power over these activities. When we have power over and variable returns from an entity, including an investment fund that we manage, we also apply significant judgment in determining whether we are acting as a principal or agent. To make this determination, we consider factors such as how much discretion we have regarding the management of the investment fund and the magnitude and extent of variability associated with our interests in the fund. If we determine we are the principal rather than the agent, we would consolidate the assets and liabilities of the fund. Interests held by external parties in investment funds that we consolidate are recorded as third-party interest in consolidated investment funds in Other liabilities. If we lose control of an entity, the assets and liabilities of that entity are derecognized from our Consolidated Statements of Financial Position at the date at which control is lost and any investment retained is remeasured to fair value.

A joint venture exists when SLF Inc., or one of its subsidiaries, has joint control of a joint arrangement and has rights to the net assets of the arrangement. Joint control is the contractually agreed sharing of control and exists only when the decisions about the relevant activities require the unanimous consent of the parties sharing control. Associates are entities over which SLF Inc. or its subsidiaries are able to exercise significant influence. Significant influence is the power to participate in the financial and operating policy decisions of an investee but not have control or joint control over those decisions. Significant influence is generally presumed to exist when SLF Inc. or its subsidiaries holds greater than 20% of the voting power of the investee but does not have control or joint control. The equity method is used to account for our interests in joint ventures and associates. A joint operation exists when SLF Inc., or one of its subsidiaries, has joint control of an arrangement that gives it rights to the assets and obligations for the liabilities of the operation, rather than the net assets of the arrangement. For joint operations, we record our share of the assets, liabilities, revenue and expenses of the joint operation. Judgment is required to determine whether contractual arrangements between multiple parties results in control, joint control or significant influence, with consideration of the relevant activities of the entity, voting rights, representation on boards of directors and other decision-making factors. Judgment is also required to determine if a joint arrangement is a joint venture or joint operation, with consideration of our rights and obligations and the structure and legal form of the arrangement.

Determination of Fair Value

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. Fair value is measured using the assumptions that market participants would use when pricing an asset or liability. We determine fair value by using quoted prices in active markets for identical or similar assets or liabilities. When quoted prices in active markets are not available, fair value is determined using valuation techniques that maximize the use of observable inputs. When observable valuation inputs are not available, significant judgment is required to determine fair value by assessing the valuation techniques and valuation inputs. The use of alternative valuation techniques or valuation inputs may result in a different fair value. A description of the fair value methodologies, assumptions, valuation techniques, and valuation inputs by type of asset is included in Note 5.

Foreign Currency Translation

Translation of Transactions in Foreign Currencies

The financial results of SLF Inc. and its subsidiaries, joint ventures and associates are prepared in the currency in which they conduct their ordinary course of business, which is referred to as functional currency. Transactions occurring in currencies other than the functional currency are translated to the functional currency using the spot exchange rates at the dates of the transactions.

Monetary assets and liabilities in foreign currencies are translated to the functional currency at the exchange rate at the statement of financial position date. Non-monetary assets and liabilities in foreign currencies that are held at fair value are translated using the exchange rate at the statement of financial position date, while non-monetary assets and liabilities that are measured at historical cost are translated using the exchange rate at the date of the transaction.

The resulting exchange differences from the translation of monetary items and non-monetary items held at fair value, with changes in fair value recorded to income, are recognized in our Consolidated Statements of Operations. For monetary assets classified as available-for-sale ("AFS"), translation differences calculated on amortized cost are recognized in our Consolidated Statements of Operations and other changes in carrying amount are recognized in other comprehensive income ("OCI"). The exchange differences from the translation of non-monetary items classified as AFS are recognized in OCI.

Translation to the Presentation Currency

In preparing our Consolidated Financial Statements, the financial statements of foreign operations are translated from their respective functional currencies to Canadian dollars, our presentation currency. Assets and liabilities are translated at the closing exchange rate at the statement of financial position date, and income and expenses are translated using the average exchange rates. The accumulated gains or losses arising from translation of functional currencies to the presentation currency, net of the effect of any hedges, are included as a separate component of OCI within equity. Upon disposal of a foreign operation that includes loss of control, significant influence or joint control, the cumulative exchange gain or loss related to that foreign operation is recognized in income.

Invested Assets

Financial Assets Excluding Derivative Financial Instruments

Financial assets include cash, cash equivalents and short-term securities, debt securities, equity securities, mortgages and loans, financial assets included in other invested assets and policy loans. Financial assets are designated as financial assets at fair value through profit or loss ("FVTPL") or AFS assets, or are classified as loans and receivables at initial recognition.

The following table summarizes the financial assets included in our Consolidated Statements of Financial Position and the asset classifications applicable to these assets:

Cash, cash equivalents and short-term securities	FVTPL
Debt securities	FVTPL and AFS
Equity securities	FVTPL and AFS
Mortgages and loans	Loans and receivables
Other invested assets	FVTPL and AFS
Policy loans	Loans and receivables

Mortgages and loans include mortgages, loans and debt securities not quoted in an active market. Financial assets included in Other invested assets include investments in limited partnerships, segregated funds and mutual funds. Cash equivalents are highly liquid instruments with a term to maturity of three months or less, while short-term securities have a term to maturity exceeding three months but less than one year. Policy loans are fully secured by the policy values on which the loans are made. The accounting for each asset classification is described in the following sections.

i) Initial Recognition and Subsequent Measurement

Generally, debt securities, equity securities and other invested assets supporting our insurance contract liabilities or investment contract liabilities measured at fair value are designated as FVTPL, while debt securities, equity securities and other invested assets not supporting our insurance contract liabilities or that are supporting investment contract liabilities are measured at amortized cost or designated as AFS. Mortgages and loans and policy loans are classified as loans and receivables. Financial assets are recognized in the Consolidated Statements of Financial Position on their trade dates, which are the dates that we commit to purchase or sell the assets. Originated mortgages and loans are recognized in the Consolidated Statements of Financial Position on their funding dates.

Financial Assets at Fair Value Through Profit or Loss

Financial assets at FVTPL include financial assets that are held-for-trading ("HFT"), as well as financial assets that have been designated as FVTPL at initial recognition. A financial asset is classified as HFT if it is acquired principally for the purpose of selling in the near term. A financial asset can be designated as FVTPL if it eliminates or significantly reduces a measurement or recognition inconsistency that would otherwise arise from measuring assets or liabilities or recognizing the gains and losses on them on different bases; or if a group of financial assets, financial liabilities or both, is managed and its performance is evaluated on a fair value basis. Cash equivalents and short-term securities have been classified as HFT.

Generally, debt securities, equity securities and other invested assets supporting insurance contract liabilities or investment contract liabilities measured at fair value have been designated as FVTPL. This designation has been made to eliminate or significantly reduce the measurement inconsistency that would arise due to the measurement of the insurance contract or investment contract liabilities, which are based on the carrying value of the assets supporting those liabilities. Because the carrying value of insurance contract liabilities is determined by reference to the assets supporting those liabilities, changes in the insurance contract liabilities generally offset changes in the fair value of debt securities classified as FVTPL, except for changes that are due to impairment. The majority of equity securities and other invested assets classified as FVTPL are held to support products where investment returns are passed through to policyholders and therefore, changes in the fair value of those assets are significantly offset by changes in insurance contract liabilities.

Financial assets classified as FVTPL are recorded at fair value in our Consolidated Statements of Financial Position and transaction costs are expensed immediately. Changes in fair value as well as realized gains and losses on sale are recorded in Fair value and foreign currency changes on assets and liabilities in our Consolidated Statements of Operations. Interest income earned and dividends received are recorded in Interest and other investment income in our Consolidated Statements of Operations.

Available-for-Sale Financial Assets

Financial assets classified as AFS are recorded at fair value in our Consolidated Statements of Financial Position and transaction costs are capitalized on initial recognition. Transaction costs for debt securities are recognized in income using the effective interest method, while transaction costs for equity securities and other invested assets are recognized in income when the asset is derecognized. Changes in fair value are recorded to unrealized gains and losses in OCI. For foreign currency translation, exchange differences calculated on the amortized cost of AFS debt securities are recognized in income and exchange differences calculated on other changes in carrying amount are recognized in OCI. The exchange differences from the translation of AFS equity securities and other invested assets are recognized in OCI. Interest income earned and dividends received are recorded in Interest and other investment income in our Consolidated Statements of Operations. Net impairment losses and realized gains and losses on the sale of assets classified as AFS are reclassified from accumulated OCI to Net gains (losses) on available-for-sale assets in our Consolidated Statements of Operations.

Loans and Receivables

Loans and receivables are generally carried at amortized cost. Transaction costs for mortgages and loans are capitalized on initial recognition and are recognized in income using the effective interest method. Realized gains and losses on the sale of mortgages and loans, interest income earned, and fee income are recorded in Interest and other investment income in our Consolidated Statements of Operations.

Solely Payments of Principal and Interest ("SPPI") Disclosures

In September 2016, the IASB issued *Amendments to IFRS 4* to allow insurance entities whose predominant activities are to issue contracts within the scope of IFRS 4 an optional temporary exemption from applying IFRS 9 *Financial Instruments* ("IFRS 9") ("deferral approach"). We qualify and have elected to take the deferral approach as our activities are predominantly connected with insurance and we will continue to apply IAS 39 *Financial Instruments: Recognition and Measurement* ("IAS 39"), the existing financial instrument standard.

To enable a comparison to entities applying IFRS 9 we disclose those invested assets that pass the SPPI test, excluding any that are managed and whose performance is evaluated on a fair value basis. Except for Debt securities designated as AFS and Mortgages and loans, our financial assets are managed and their performance is evaluated on a fair value basis. Please refer to Note 5.A.i for the related disclosure as at December 31, 2019 and 2018.

Financial assets that pass the SPPI test are assets with contractual terms that give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

ii) Derecognition

Financial assets are derecognized when our rights to contractual cash flows expire, when we transfer substantially all our risks and rewards of ownership, or when we no longer retain control.

iii) Impairment

Financial assets are assessed for impairment on a quarterly basis. Financial assets are impaired and impairment losses are incurred if there is objective evidence of impairment as a result of one or more loss events and that event has an impact on the estimated future cash flows that can be reliably estimated. Objective evidence of impairment generally includes significant financial difficulty of the issuer, including actual or anticipated bankruptcy or defaults and delinquency in payments of interest or principal or disappearance of an active market for that financial asset. Objective evidence of impairment for an investment in an equity instrument or other invested asset also includes, but is not limited to, the financial condition and near-term prospects of the issuer, including information about significant changes with adverse effects that have taken place in the technological, market, economic, or legal environment in which the issuer operates that may indicate that the carrying amount will not be recovered, and a significant or prolonged decline in the fair value of an equity instrument or other invested asset below its cost. Management exercises considerable judgment in assessing for objective evidence of impairment. Due to the inherent risks and uncertainties in our evaluation of assets or groups of assets for objective evidence of impairment, the actual impairment amount and the timing of the recognition of impairment may differ from management assessment. The impairment assessment process is discussed in Note 6.

Financial Assets at Fair Value Through Profit or Loss

Since financial assets classified as FVTPL are carried at fair value with changes in fair value recorded to income, any reduction in value of the assets due to impairment is already reflected in income. However, the impairment of assets classified as FVTPL generally impacts the change in insurance contract liabilities due to the impact of asset impairment on estimates of future cash flows.

Available-for-Sale Financial Assets

When there is objective evidence that a financial asset classified as AFS is impaired, the loss in accumulated OCI is reclassified to Net gains (losses) on available-for-sale assets in our Consolidated Statements of Operations. Following impairment loss recognition, a debt security continues to be carried at fair value with changes in fair value recorded in OCI, and it is assessed quarterly for further impairment loss or reversal. Subsequent losses on an impaired equity security or other invested asset, including losses relating to foreign currency changes, are reclassified from OCI to income in subsequent reporting periods until the asset is derecognized. Once an impairment loss on a debt security classified as AFS is recorded to income, any reversal of impairment loss through income occurs only when the recovery in fair value is objectively related to an event occurring after the impairment was recognized. Impairment losses on an equity security or other invested asset classified as AFS are not reversed through income.

Loans and Receivables

If an impairment loss on an individual mortgage or loan has been incurred, the amount of the loss is measured as the difference between the asset's carrying amount and the present value of the estimated future cash flows discounted at the asset's original effective interest rate. For collateralized financial assets, the present value of the estimated future cash flows reflects the cash flows that may result from foreclosure less costs to sell, whether or not foreclosure is probable. If no evidence of impairment exists for an individually assessed mortgage or loan, it is included in a group of loans with similar credit risk characteristics and collectively assessed for impairment.

When an impairment loss has been incurred, the carrying amount of the asset is reduced through the use of an allowance account, and the amount of the loss is recognized in income. If the impairment loss subsequently decreases and the decrease can be related objectively to an event occurring after the initial impairment charge was recognized, the previous impairment charge is reversed by adjusting the allowance account and the reversal is recognized in income. Interest income is recognized on impaired mortgages and loans using the effective interest rate method and it is based on the estimated future cash flows used to measure the impairment loss. Changes in the allowance account, other than write-offs net of recoveries, are charged against Interest and other investment income in our Consolidated Statements of Operations. Write-offs, net of recoveries, are deducted from the allowance account when there is no realistic prospect of recovery, which is typically not before derecognition of the asset through foreclosure or sale.

Collateral

Cash received (pledged) as collateral is recognized (derecognized) in our Consolidated Statements of Financial Position with corresponding amounts recognized in Other liabilities (Other assets), respectively. All other types of assets received (pledged) as collateral are not recognized (derecognized) in our Consolidated Statements of Financial Position.

Derivative Financial Instruments

All derivative financial instruments are recorded at fair value in our Consolidated Statements of Financial Position. Derivatives with a positive fair value are recorded as Derivative assets while derivatives with a negative fair value are recorded as Derivative liabilities.

The accounting for the changes in fair value of a derivative instrument depends on whether or not it is designated as a hedging instrument for hedge accounting purposes. Changes in (i) fair value of derivatives that are not designated for hedge accounting purposes, which are defined as derivative investments, and (ii) embedded derivatives that are bifurcated, are recorded in Fair value and foreign currency changes on assets and liabilities in our Consolidated Statements of Operations. Income earned or paid on these derivatives is recorded in Interest and other investment income in our Consolidated Statements of Operations. Hedge accounting is applied to certain derivatives to reduce income statement volatility. When certain qualification criteria are met, hedge accounting recognizes the offsetting effects of hedging instruments and hedged items in income or defers the effective portion of changes in fair value of hedging instruments in OCI until there is a recognition event, such as the occurrence of a forecasted transaction or the disposal of an investment in a foreign operation, or hedge accounting is discontinued. All hedging relationships are documented at inception and hedge effectiveness is assessed at inception and on a quarterly basis to determine whether the hedging instruments are highly effective in offsetting changes attributable to the hedged risk in the fair value or cash flows of the hedged items.

Fair Value Hedges

Certain interest rate swaps and foreign currency forwards are designated as hedging instruments in fair value hedges of the interest rate or foreign exchange rate risks associated with AFS assets. Changes in fair value of the derivatives are recorded in Interest and other investment income in our Consolidated Statements of Operations. The change in fair value of the AFS assets related to the hedged risk is reclassified from OCI to income. As a result, ineffectiveness, if any, is recognized in income to the extent that changes in fair value of the derivatives and AFS assets do not offset. Interest income earned and paid on the AFS assets and swaps in the fair value hedging relationships are recorded in Interest and other investment income in our Consolidated Statements of Operations.

Cash Flow Hedges

Certain equity and foreign currency forwards are designated as hedging instruments in cash flow hedges for anticipated payments of awards under certain share-based payment plans and for anticipated foreign currency purchases of foreign operations. Changes in the fair value of derivatives for the effective portion of the hedge are recognized in OCI, while the ineffective portion of the hedge and any items excluded from the hedging relationship, such as the spot-to-forward differential, are recognized in Interest and other investment income in our Consolidated Statements of Operations. A portion of the amount recognized in OCI related to the equity forwards is reclassified to income as a component of Operating expenses as the liabilities for the share-based payment awards are accrued over the vesting period. A portion of the amounts recognized in OCI related to the foreign currency forwards would be reclassified to income upon disposal or impairment of the foreign operations. All amounts recognized in, or reclassified from, OCI are net of related taxes.

Embedded Derivatives

An embedded derivative is a component of a host contract that modifies the cash flows of the host contract in a manner similar to a derivative, according to a specified interest rate, financial instrument price, foreign exchange rate, underlying index or other variable. We are required to separate embedded derivatives from the host contract, if an embedded derivative has economic and risk characteristics that are not closely related to the host contract, meets the definition of a derivative, and the combined contract is not measured at fair value with changes recognized in income. If an embedded derivative is bifurcated for accounting purposes from the host contract, it will be accounted for as a derivative. For further details on embedded derivatives in insurance contracts, see the Insurance Contract Liabilities accounting policy in this Note.

Investment Properties

Investment properties are real estate held to earn rental income, for capital appreciation, or both. Properties held to earn rental income or for capital appreciation that have an insignificant portion that is owner-occupied are classified as investment properties. Properties that do not meet these criteria are classified as property and equipment, included in Other assets as described below. Expenditures related to ongoing maintenance of properties incurred subsequent to acquisition are expensed. Investment properties are initially recognized at cost in our Consolidated Statements of Financial Position. Various costs incurred associated with the acquisition of an investment property are either capitalized or expensed depending on whether or not the acquisition is considered a business combination. Investment properties are subsequently measured at fair value with changes in value recorded to Fair value and foreign currency changes on assets and liabilities in our Consolidated Statements of Operations.

When the use of a property changes from owner-occupied to investment property, any gain arising on the remeasurement of the property to fair value at the date of transfer is recognized in our Consolidated Statements of Operations to the extent that it reverses a previous impairment loss. Any remaining increase is recognized in OCI.

Other Invested Assets – Non-Financial Assets

Other invested assets also include non-financial assets such as investments in joint ventures and associates, which are accounted for using the equity method. Investments in joint ventures and associates are initially recorded at cost. The investment in joint ventures and associates is increased by our share of capital contributions and for purchases of additional interests and is reduced by distributions received. In addition, subsequent adjustments to the investment are made for our share of net income or loss and our share of OCI. Our share of net income is recorded in Interest and other investment income in our Consolidated Statements of Operations and our share of OCI is recorded in our Consolidated Statements of Comprehensive Income (Loss). Impairment losses on equity method investments are recognized when events or changes in circumstances indicate that they are impaired. The impairment loss recognized is the difference between the carrying amount and the recoverable amount.

Other Assets

Other assets, which are measured at amortized cost, include accounts receivable, investment income due and accrued, deferred acquisition costs, property and equipment, and lessee's right-of-use assets. Deferred acquisition costs arising from service contracts or from service components of investment contracts are amortized over the expected life of the contracts based on the future expected fees. Owner-occupied properties are amortized to their residual value over 25 to 49 years. Furniture, computers, other office equipment, and leasehold improvements are amortized to their residual value over 2 to 20 years. The right-of-use asset is subsequently depreciated on a straight-line basis over the lease term.

Reinsurance Assets

In the normal course of business, we use reinsurance to limit exposure to large losses. We have a retention policy that requires that such arrangements be placed with well-established, highly-rated reinsurers. Reinsurance assets are measured consistently with the amounts associated with the underlying insurance contracts and in accordance with the terms of each reinsurance contract. Amounts due to or from reinsurers with respect to premiums received or paid claims are included in Other assets and Other liabilities in the Consolidated Statements of Financial Position. Premiums for reinsurance ceded are presented as premiums ceded in the Consolidated Statements of Operations. Reinsurance expenses (recoveries), as presented in our Consolidated Statements of Operations, represent reinsurance expenses and expense recoveries resulting from reinsurance agreements.

Reinsurance assets are subject to impairment testing. If impaired, the carrying value is reduced, and an impairment loss is recognized in Reinsurance expenses (recoveries) in our Consolidated Statements of Operations. Impairment occurs when objective evidence exists (as a result of an event) after the initial recognition of the reinsurance asset indicating that not all amounts due under the terms of the contract will be received, and the impairment can be reliably measured.

Reinsurance assumed is accounted for as an insurance, investment or service contract depending on the underlying nature of the agreement and if it meets the definition of an insurance, investment or service contract. For the accounting for these types of contracts, see the respective policy section in this Note.

Intangible Assets

Intangible assets consist of finite life and indefinite life intangible assets. Finite life intangible assets are amortized on a straight-line basis or using a units-of-production method, over the useful economic lives which are varying periods of up to 40 years. Amortization is charged through operating expenses. The useful lives of finite life intangible assets are reviewed annually, and the amortization is adjusted as necessary. Indefinite life intangibles are not amortized, and are assessed for impairment annually or more frequently if events or changes in circumstances indicate that the asset may be impaired. Impairment is assessed by comparing the carrying values of the indefinite life intangible assets to their recoverable amounts. The recoverable amount is the higher of an asset's fair value less costs to sell and its value in use. If the carrying values of the indefinite life intangibles exceed their recoverable amounts, these assets are considered impaired, and a charge for impairment is recognized in our Consolidated Statements of Operations. The recoverable amount of intangible assets is determined using various valuation models, which require management to make certain judgments and assumptions that could affect the estimates of the recoverable amount.

Goodwill

Goodwill represents the excess of the cost of an acquisition over the fair value of the net identifiable tangible and intangible assets of the acquired businesses. It is carried at original cost less any impairment subsequently incurred. Goodwill is assessed for impairment annually or more frequently if events or circumstances occur that may result in the recoverable amount of a CGU or a group of CGUs falling below its carrying value. A CGU is the smallest identifiable group of assets that generates cash inflows that are largely independent of cash inflows from other groups of assets. We exercise significant judgment in determining our CGUs. The factors considered in determining our CGUs include product cash inflows, product distribution, target markets, and how management monitors and evaluates the operations.

The goodwill balances are allocated to either individual or groups of CGUs that are expected to benefit from the synergies of the business combination. Goodwill impairment is quantified by comparing a CGU's or a group of CGUs' carrying value to its recoverable amount, which is the higher of fair value less costs of disposal and value in use. Impairment losses are recognized immediately and cannot be reversed in future periods. Significant judgment is involved in estimating the model inputs used to determine the recoverable amount of our CGUs or group of CGUs, including those for discount rates, capital, the value of new business, expenses, cash flow projections, and market multiples, due to the uncertainty and the forward-looking nature of these inputs. The assumptions may differ from the actual experience, and estimates may change from period to period based on future events or revisions of assumptions. These key assumptions are discussed in Note 9.

Insurance Contract Liabilities

Insurance contracts are contracts under which we accept significant insurance risk from a policyholder by agreeing to compensate the policyholder if a specified uncertain future event adversely affects the policyholder. The presence of significant insurance risk in individual contracts is assessed by reviewing books of contracts with homogeneous risk features. Judgment is required to determine the classification of a contract as an insurance contract, investment contract or a service contract.

As discussed in the Segregated Funds section of this Note, certain insurance contracts under which the policyholder bears the risks associated with the underlying investments are classified as Insurance contracts for account of segregated fund holders in our Consolidated Statements of Financial Position.

Insurance contract liabilities, including policy benefits payable and provisions for policyholder dividends, are determined in accordance with Canadian accepted actuarial practice and any requirements of OSFI. As confirmed by guidance provided by the Canadian Institute of Actuaries (“CIA”), the current Canadian Asset Liability Method (“CALM”) of valuation of insurance contract liabilities satisfies the IFRS 4 *Insurance Contracts* (“IFRS 4”) requirements for eligibility for use under IFRS. Under CALM, liabilities are set equal to the statement of financial position value of the assets required to support them.

Some insurance contracts contain discretionary participation features (“DPF”), whereby the policyholder has the right to receive potentially significant additional benefits based on the actual investments and other experience on a block of similar contracts. IFRS allows the non-guaranteed, or participating, elements of such contracts to be classified as either a liability or as equity, depending on the nature of our obligation to the policyholder. The contracts issued by us contain constructive obligations to the policyholder with respect to the DPF of the contracts. We have therefore elected to classify these features as a liability, consistent with accounting treatment under CALM, and in accordance with guidance provided by the CIA.

Derivatives embedded in insurance contracts are treated as separate derivatives and measured at fair value with changes in fair value recognized in income, except when the embedded derivative itself meets the definition of an insurance contract under IFRS, or when the risks and characteristics are closely related to those of the host contracts or when the derivative is the policyholder’s option to surrender an insurance contract for a fixed amount or an amount based on a fixed amount and an interest rate. The derivatives that have not been separated are accounted for as insurance contract liabilities.

Significant judgment is required in determining our liabilities for insurance contracts including the assumptions required for their determination. Application of different assumptions may result in different measurement of the insurance contract liabilities. Actual experience may differ from assumptions, and estimates may change from period to period based on future events or revisions of assumptions. Key assumptions and considerations in choosing assumptions are discussed in Note 10 and sensitivities are discussed in Note 7.

Financial Liabilities

Investment Contract Liabilities

Contracts issued by us that do not transfer significant insurance risk, but do transfer financial risk from the policyholder to us, are financial liabilities and are accounted for as investment contracts. Service components of investment contracts are treated as service contracts. For further details on how service components of investment contracts are treated, see the Service Contracts accounting policy in this Note.

Liabilities for investment contracts without DPF are measured at FVTPL or amortized cost. Contracts recorded at FVTPL are measured at fair value at inception and each subsequent reporting period. Contracts recorded at amortized cost are initially recognized at fair value, less transaction costs directly attributable to the issue of the contract. At each subsequent period, the contracts are measured at amortized cost using the effective interest method. Changes in fair value of investment contract liabilities recorded at FVTPL and amortization on contracts recorded at amortized cost are recorded as an Increase (decrease) in investment contract liabilities in our Consolidated Statements of Operations. Deposits collected from and payments made to contract holders are recorded as an increase and decrease in Investment contract liabilities in our Consolidated Statements of Financial Position. These liabilities are derecognized when the obligation of the contract is discharged, cancelled or expired.

As discussed in the Segregated Funds section of this Note, certain investment contracts under which the policyholder bears the risks associated with the underlying investments are classified as Investment contracts for account of segregated fund holders in the Consolidated Statements of Financial Position. The accounting for investment contracts that contain DPF is described in the Insurance Contract Liabilities section of this Note.

Other Liabilities

Other liabilities, which are measured at amortized cost, include accounts payable, lines of credit, repurchase agreements, accrued expenses and taxes, senior financing, provisions, lessee’s lease liabilities and a deferred payment liability. Liabilities for provisions, other than insurance contract liabilities and investment contract liabilities, are recognized for present legal or constructive obligations as a result of a past event if it is probable that they will result in an outflow of economic resources and the amount can be reliably estimated. The amounts recognized for these provisions are the best estimates of the expenditures required to settle the present obligations or to transfer them to a third party at the statement of financial position date, considering all the inherent risks and uncertainties, as well as the time value of money. These provisions are reviewed as relevant facts and circumstances change.

The lease liabilities are initially measured at the present value of lease payments over the term of the lease using a discount rate that is based on our incremental borrowing rate. Subsequently, the lease liabilities are measured at amortized cost using the effective interest method.

Other liabilities also include the Put option liability, which is measured at fair value. Upon initial recognition, the present value of the put option is calculated using our incremental borrowing rate. The subsequent interest expense recorded using the effective interest method as well as subsequent revisions to the expected exercise price payable for the put option will be recognized in the Consolidated Statements of Operations. If the put option expires unexercised or is cancelled, the carrying value of the financial liability will be released first to non-controlling interests (“NCI”), with excess amounts if any recognized against retained earnings.

Further details on the put option and deferred payment liabilities are included in Note 3.

Senior Debentures and Subordinated Debt

Senior debentures and subordinated debt liabilities are recorded at amortized cost using the effective interest method. Transaction costs are recorded as part of the liability and are recognized in income using the effective interest method. These liabilities are derecognized when the obligation of the contract is discharged, cancelled or expired.

Service Contracts

Contracts issued by us to customers that do not transfer significant insurance risk and do not transfer financial risk from the customer to us, including contracts for investment management service, are classified as service contracts. Service components of investment contracts are also accounted for as service contracts. Fee income earned from these contracts is described in the Premium and Fee Income Recognition accounting policy section of this Note. Deferred acquisition costs are described under the Other Assets accounting policy section of this Note. Where the cost of meeting the obligations of the contract exceed the economic benefits expected to be received under it, a provision is recognized in Other liabilities.

Segregated Funds

Segregated funds are products for which we issue a contract where the benefit amount is directly linked to the fair value of the investments held in the particular segregated fund. Although the underlying assets are registered in our name and the segregated fund contract holder has no direct access to the specific assets, the contractual arrangements are such that the segregated fund policyholder bears the risks and rewards of the fund's investment performance. In addition, certain contracts include guarantees from us. We derive fee income from segregated funds, which is included in Fee income in our Consolidated Statements of Operations. Policyholder transfers between general funds and segregated funds are included in Net transfer to (from) segregated funds in our Consolidated Statements of Operations. Deposits to segregated funds are reported as increases in segregated funds liabilities and are not reported as revenues in our Consolidated Statements of Operations.

Investments for Account of Segregated Fund Holders

Investments for account of segregated fund holders are recorded separately from the Total general fund assets in our Consolidated Statements of Financial Position and are carried at fair value. Fair values are determined using quoted market values or, where quoted market values are not available, estimated fair values as determined by us.

Insurance Contracts for Account of Segregated Fund Holders

Insurance contracts for account of segregated fund holders are recorded separately from the Total general fund liabilities in our Consolidated Statements of Financial Position. Insurance contracts under which the segregated fund holders bear the risks associated with the underlying investments are classified as Insurance contracts for account of segregated fund holders. The liabilities reported as Insurance contracts for account of segregated fund holders are measured at the aggregate of the policyholder account balances. Changes in the fair value of the invested assets of the segregated funds are recorded in net realized and unrealized gains (losses) within the segregated fund and are not recorded in our Consolidated Statements of Operations.

Other assets and liabilities associated with these insurance contracts, such as origination costs and the liabilities associated with guarantees provided by us, are included in general fund liabilities in Insurance contract liabilities in our Consolidated Statements of Financial Position.

Investment Contracts for Account of Segregated Fund Holders

Investment contracts for account of segregated fund holders are recorded separately from the Total general fund liabilities in our Consolidated Statements of Financial Position. Investment contracts under which the segregated fund holders bear the risks associated with the underlying investments are classified as Investment contracts for account of segregated fund holders. The liabilities reported as Investment contracts for account of segregated fund holders are measured at the aggregate of the policyholder account balances.

Other liabilities associated with these investment contracts, such as onerous contract provisions required for service components, are included in general fund liabilities in Investment contract liabilities in our Consolidated Statements of Financial Position.

Income Taxes

Current income tax assets and liabilities for the current and prior periods are measured at the amount expected to be recovered from or paid to the taxation authorities. Deferred income tax is provided using the liability method on temporary differences at the statement of financial position date between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes. Current and deferred income tax relating to items recognized in the current or previous period in OCI or directly in equity is accordingly recognized in OCI or equity and not in our Consolidated Statements of Operations. Interest and penalties payable to taxation authorities are recorded in Interest expense and Operating expenses, respectively, in our Consolidated Statements of Operations.

Deferred income tax assets and liabilities are calculated based on income tax rates and laws that are expected to apply when the liability is settled or the asset is realized, which are normally those enacted or considered substantively enacted at our Consolidated Statements of Financial Position dates. Deferred income tax assets are recognized for all deductible temporary differences, carry forward of unused tax credits and unused tax losses to the extent of the probability that future taxable profit will be available against which these assets can be utilized. At each reporting period, we assess all available evidence, both positive and negative, to determine the amount of deferred income tax assets to be recognized. The recognition of deferred income tax assets requires estimates and significant judgment about future events, such as projections of future taxable profits, based on the information available at the reporting date.

The determination of the required provision for current and deferred income taxes requires that we interpret tax legislation in the jurisdictions in which we operate. For each reporting period, our income tax provision reflects our best estimate, based on the information available at the reporting date, of tax positions that are under audit or appeal by relevant tax authorities. To the extent that our estimate of tax positions or the timing of realization of deferred income tax assets or liabilities are not as expected, the provision for income taxes may increase or decrease in the future to reflect the actual experience.

Deferred income tax is provided on temporary differences arising on investments in subsidiaries, joint ventures and associates, except where we control the timing of the reversal of the temporary difference and it is apparent that the temporary difference will not reverse in the foreseeable future. No deferred income tax asset or liability is recognized in relation to temporary differences that arise from the initial recognition of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, did not affect either the accounting profit or taxable profit or loss. Deferred income tax assets and deferred income tax liabilities are offset if a legally enforceable right exists to set off current tax assets against current tax liabilities, the deferred income taxes relate to the same taxable entity and the same taxation authority and we intend either to settle on a net basis, or to realize the asset and settle the liability simultaneously.

In determining the impact of taxes, we are required to comply with Canadian accepted actuarial practice and IFRS. CALM requires that all projected cash flows associated with insurance contract liabilities, including income taxes, be included in the determination of insurance contract liabilities. The insurance contract liabilities are therefore determined including all policy-related income tax effects on a discounted basis, and then adjusted for any related deferred income tax assets and liabilities held in accordance with IFRS. The net result of this adjustment is to leave the discounting effect of the deferred income taxes associated with temporary differences on policy-related tax items in the insurance contract liabilities.

Pension Plans and Other Post-Retirement Benefits

For defined benefit plans, the present value of the defined benefit obligation is calculated by independent actuaries using the projected unit credit method, and actuarial assumptions that represent best estimates of future variables that will affect the ultimate cost of these

obligations. The discount rate used for our material defined benefit plans is determined with reference to market yields of high-quality corporate bonds that are denominated in the same currency in which the benefits will be paid, and that have terms to maturity approximating the terms of obligations. Plan assets are measured at fair value and are held in separate trustee administered funds or as qualifying insurance contracts. The difference between the fair value of the plan assets and the present value of the defined benefit obligation is recognized on the Consolidated Statements of Financial Position as an asset or liability in Other assets or Other liabilities, respectively.

Costs charged to our Consolidated Statements of Operations include current service cost, any past service costs, any gains or losses from curtailments or settlements, and interest on the net defined benefit liability (asset). Remeasurement of the net defined benefit liability (asset), which includes the impact of changes to the actuarial assumption underlying the liability calculations, liability experience gains or losses, the difference between the return on plan assets and the amount included in the interest on the net defined benefit liability (asset), is reflected immediately in OCI. The calculation of the defined benefit expenses and obligations requires judgment as the recognition is dependent on various actuarial assumptions such as discount rates, health care cost trend rates and projected compensation increases. These key assumptions are discussed in Note 25.

Dividends

Dividends payable to holders of shares of SLF Inc. are recognized in the period in which they are authorized or approved. Dividends that have been reinvested in additional common shares under the Dividend Reinvestment and Share Purchase Plan (“DRIP”) are also reflected as dividends within retained earnings. Where SLF Inc. has issued common shares from treasury under the DRIP, the additional shares have been reflected in common shares.

Premium and Fee Income Recognition

Gross premiums for all types of insurance contracts excluding segregated fund contracts are generally recognized as revenue when due.

Fee income is generated from insurance contracts and service contracts.

Fee income from insurance contracts includes fees from segregated fund contracts, guarantee fees and other fees associated with insurance contracts and is typically recognized as revenue when services are rendered.

Fee income from service contracts represents fees associated with non-insurance contracts with customers and includes Distribution fees, Fund management and other asset-based fees, and Administrative services and other fees. Distribution fees includes fees earned from the distribution of investment products and other intermediary activities. Fund management and other asset-based fees includes fees earned from investment management services. Administrative services and other fees includes fees earned from contract administration and other management services. Fee income from service contracts is typically recognized as revenue when services are rendered at either a point in time or over time. The majority of fee income from service contracts is comprised of variable consideration which is based on a percentage of assets under management or another variable metric and is recognized as revenue when it is highly probable that a significant reversal in the amount of the revenue recognized will not occur.

Share-Based Payments

Stock options of SLF Inc. granted to employees are accounted for as equity-settled share-based payment transactions. The total compensation expense for stock options is computed based on the fair value of the stock option at the date of grant and the estimated number of options expected to vest at the end of the vesting period. The expense is recognized over the vesting period as compensation expense in Operating expenses in our Consolidated Statements of Operations, with an offset to contributed surplus in our Consolidated Statements of Changes in Equity. When options are exercised, new common shares are issued, contributed surplus is reversed and the common shares issued are credited to common shares in our Consolidated Statements of Changes in Equity.

Other share-based payment plans based on the value of SLF Inc.’s common shares are accounted for as cash-settled share-based payment transactions. The total liabilities for these plans are computed based on the estimated number of awards expected to vest at the end of the vesting period. The liabilities are recomputed at the end of each reporting period and are measured at the fair value of the award at that reporting date. The liabilities are accrued and expensed on a straight-line basis over the vesting periods. The liabilities are settled in cash at the end of the vesting period.

Share-based payment awards within MFS Investment Management (“MFS”), which are based on their own shares, are accounted for as cash-settled share-based payment awards. The vested and unvested awards, as well as the shares that have been issued under these plans, are recognized as liabilities because MFS has a practice of purchasing the issued shares from employees after a specified holding period. The total liabilities for these plans are computed based on the estimated number of awards expected to vest at the end of the vesting period. The liabilities are accrued over the vesting period and are measured at fair value at each reporting period with the change in fair value recognized as compensation expense in Operating expenses in our Consolidated Statements of Operations. The liabilities are settled in cash when the shares are purchased from the employees.

Basic and Diluted Earnings Per Share (“EPS”)

Basic EPS is calculated by dividing the common shareholders’ net income by the weighted average number of common shares issued and outstanding.

Diluted EPS adjusts common shareholders’ net income and the weighted average number of common shares for the effects of all dilutive potential common shares under the assumption that convertible instruments are converted and that outstanding options are exercised. Diluted EPS is calculated by dividing the adjusted common shareholders’ net income by the adjusted weighted average number of common shares outstanding. For convertible instruments, common shareholders’ net income is increased by the after-tax expense on the convertible instrument while the weighted average common shares are increased by the number of common shares that would be issued at conversion. For stock options, it is assumed that the proceeds from the exercise of options whose exercise price is less than the average market price of common shares during the period are used to repurchase common shares at the average market price for the period. The difference between the number of common shares issued for the exercise of the dilutive options and the number of common shares that would have been repurchased at the average market price of the common shares during the period is adjusted to the weighted average number of common shares outstanding.

2. Changes in Accounting Policies

2.A New and Amended International Financial Reporting Standards Adopted in 2019

2.A.i IFRS 16 Leases (“IFRS 16”)

In January 2016, the IASB issued IFRS 16, which replaces IAS 17 *Leases* (“IAS 17”) and related interpretations. IFRS 16 sets out the principles for the recognition, measurement, presentation, and disclosure of leases for both lessees and lessors. For lessees, IFRS 16 removes the classification of leases as either operating or financing and requires that all leases be recognized on the statement of financial position, with certain exemptions allowed by this new standard. The accounting for lessors is substantially unchanged. We adopted IFRS 16 on a modified retrospective basis as at January 1, 2019 and recognized transition adjustments in retained earnings. Our accounting policies under IFRS 16 are as follows:

We assess whether a contract is, or contains, a lease at the inception of the contract. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. For leases where we act as the lessee, we recognize a right-of-use asset and a lease liability at the commencement date of the lease. The right-of-use asset is initially measured at cost, which is comprised of the initial amount of the lease liability with certain adjustments, and subsequently depreciated using the straight-line method, with depreciation expense included in Operating expenses in the Consolidated Statements of Operations. The lease liability is initially measured at the present value of lease payments over the term of the lease using a discount rate that is based on our incremental borrowing rate. The discount rate is specific to each lease and is determined by various factors, such as the lease term and currency. The lease term includes the non-cancellable period and the optional period where it is reasonably certain we will exercise or not exercise an extension or termination option, considering various factors that create an economic incentive to do so. Subsequently, the lease liability is measured at amortized cost using the effective interest method, with interest charged to Interest expense in the Consolidated Statements of Operations. Lease liabilities and right-of-use assets are remeasured upon lease modifications.

As a result of the adoption of IFRS 16, we recognized right-of-use assets of \$744 and lease liabilities of \$880, reported in Other assets and Other liabilities, respectively, on our Consolidated Statements of Financial Position. Together with the de-recognition of deferred balances of \$105 previously recognized under IAS 17 and deferred tax impact of \$9, the adoption of IFRS 16 reduced opening retained earnings by \$22 on an after-tax basis as at January 1, 2019.

On transition to IFRS 16, we applied the practical expedient to use hindsight when determining the lease term of contracts containing extension or termination options. Our weighted-average incremental borrowing rate applied to lease liabilities as at January 1, 2019 was 3.3%. The difference between lease liabilities as at January 1, 2019 of \$880 and operating lease commitments as at December 31, 2018 of \$1,056 is primarily due to the time value of money.

2.A.ii Other New and Amended IFRS

The following new and amended IFRS are effective for annual periods beginning on or after January 1, 2019, and did not have a material impact on our Consolidated Financial Statements:

In June 2017, the IASB issued IFRIC 23 *Uncertainty over Income Tax Treatments* (“IFRIC 23”), which was developed by the IFRS Interpretations Committee. IFRIC 23 clarifies how to apply the recognition and measurement requirements in IAS 12 *Income Taxes* when there is uncertainty over income tax treatments, and requires an entity to determine whether tax treatments should be considered collectively or independently. In addition, IFRIC 23 addresses the assumptions an entity should make about the examination of tax treatments by taxation authorities, as well as how an entity should consider changes in facts and circumstances. IFRIC 23 also provides guidance on how to determine taxable profit (tax loss), tax bases, unused tax losses, unused tax credits, and tax rates, based on whether it is probable that a tax authority will accept an uncertain tax treatment used, or proposed to be used, by an entity in its income tax filings. We adopted IFRIC 23 on a cumulative retrospective basis. Adoption of IFRIC 23 did not have a material impact on our Consolidated Financial Statements.

In October 2017, the IASB issued narrow-scope amendments to IAS 28 *Investments in Associates and Joint Ventures*. The amendments clarify that long-term interests in an associate or joint venture to which the equity method is not applied should be accounted for following the requirements of IFRS 9. These amendments are required to be applied retrospectively with certain exceptions. As we qualified for and have elected to take the IFRS 9 deferral approach, we will continue to apply IAS 39 to the long-term interests in associates or joint ventures covered by these amendments.

In December 2017, the IASB issued *Annual Improvements to IFRSs 2015-2017 Cycle*, which includes minor amendments to four IFRS standards. These amendments were applied prospectively.

In February 2018, the IASB issued *Plan Amendment, Curtailment or Settlement* which amends IAS 19 *Employee Benefits* (“IAS 19”). Under IAS 19, when an amendment, curtailment or settlement of a defined benefit pension plan occurs, the net defined benefit liability or asset is remeasured. The amendments require an entity to use the updated assumptions from this remeasurement to determine current service cost and net interest for reporting periods after the change to the plan. These amendments were applied to plan amendments, curtailments or settlements occurring on or after January 1, 2019.

2.B New and Amended International Financial Reporting Standards to be Adopted in 2020

The following new and amended IFRS were issued by the IASB and are expected to be adopted by us in 2020:

In March 2018, the IASB issued a revised *Conceptual Framework for Financial Reporting* (“Conceptual Framework”), which replaces the *Conceptual Framework for Financial Reporting* issued in 2010. The revised Conceptual Framework includes revised definitions of an asset and a liability, as well as new guidance on measurement, derecognition, presentation and disclosure. The revised Conceptual Framework is effective for annual periods beginning on or after January 1, 2020. We do not expect the adoption of this guideline to have a material impact on our Consolidated Financial Statements.

In October 2018, the IASB issued *Definition of a Business*, which amends IFRS 3 *Business Combinations*. The amendments clarify the definition of a business to assist entities in determining whether a transaction represents a business combination or an acquisition of assets. The amendments are effective for annual periods beginning on or after January 1, 2020, to be applied prospectively. We do not expect the adoption of these amendments to have a material impact on our Consolidated Financial Statements.

In October 2018, the IASB issued *Definition of Material (Amendments to IAS 1 and IAS 8)*. The amendments clarify the definition of material and provide guidance to improve consistency in its application in IFRS standards. The amendments are effective for annual periods beginning on or after January 1, 2020. We do not expect the adoption of these amendments to have a material impact on our Consolidated Financial Statements.

In September 2019, the IASB issued the *Interest Rate Benchmark Reform*, which includes amendments to IFRS 9, IAS 39, and IFRS 7 *Financial Instruments: Disclosures*. The amendments clarify that entities can continue to apply certain hedge accounting requirements assuming that the interest rate benchmark on which the hedged cash flows and cash flows from the hedging instrument are based will not be altered as a result of interest rate benchmark reform. The amendments are effective for annual periods beginning on or after January 1, 2020. We are currently assessing the impact of adoption on our Consolidated Financial Statements.

2.C New and Amended International Financial Reporting Standards to be Adopted in 2021 or Later

The following new and amended standards were issued by the IASB and are expected to be adopted by us in 2021 or later:

In July 2014, the IASB issued the final version of IFRS 9, which replaces IAS 39. IFRS 9 includes guidance on the classification and measurement of financial instruments, impairment of financial assets, and hedge accounting. Financial asset classification is based on the cash flow characteristics and the business model in which an asset is held. The classification determines how a financial instrument is accounted for and measured. IFRS 9 also introduces an impairment model for financial instruments not measured at fair value through profit or loss that requires recognition of expected losses at initial recognition of a financial instrument and the recognition of full lifetime expected losses if certain criteria are met. In addition, a new model for hedge accounting was introduced to achieve better alignment with risk management activities. This standard is effective for annual periods beginning on or after January 1, 2018. In October 2017, the IASB issued narrow-scope amendments to IFRS 9. The amendments clarify the classification of certain prepayable financial assets and the accounting of financial liabilities following modification. The amendments are effective for annual periods beginning on or after January 1, 2019. However, pursuant to the aforementioned amendments to IFRS 4, we elected the deferral approach permitted under IFRS 4 to continue to apply IAS 39. We are currently assessing the impact that IFRS 9, along with these amendments, will have on our Consolidated Financial Statements.

In May 2017, the IASB issued IFRS 17 *Insurance Contracts* (“IFRS 17”), which replaces IFRS 4. IFRS 17 establishes the principles for the recognition, measurement, presentation, and disclosure of insurance contracts. IFRS 17 requires entities to measure insurance contract liabilities at their current fulfillment values using one of three measurement models, depending on the nature of the contract. IFRS 17 is effective for annual periods beginning on or after January 1, 2021 and is to be applied retrospectively to each group of insurance contracts unless impracticable. If, and only if, it is impracticable to apply IFRS 17 retrospectively for a group of insurance contracts, an entity shall apply IFRS 17 using a modified retrospective approach or a fair value approach. In June 2019, the IASB issued an exposure draft (“ED”) that proposes targeted amendments to IFRS 17 for public consultation. As part of the ED, the IASB has proposed to defer the effective date by one year to January 1, 2022 as well as extend the deferral option of IFRS 9 for insurers to that same date. The IASB will continue to discuss comments received on the proposals, including comments on the proposed effective date, before finalizing the amendments later in 2020. IFRS 17 will affect how we account for our insurance contracts and how we report our financial performance in our Consolidated Statements of Operations. We are currently assessing the impact that IFRS 17 will have on our Consolidated Financial Statements.

3. Acquisitions and Other

Acquisition of BentallGreenOak

On July 1, 2019, we acquired 56% of BentallGreenOak (“BGO”), which was the product of the merger of the Bentall Kennedy group of companies (“Bentall Kennedy”) and GreenOak Real Estate (“GreenOak”), a global real estate investment firm. The former GreenOak shareholders hold the remaining interest in BGO. Total consideration of \$411 included approximately \$192 in cash and 44% of our interest in Bentall Kennedy which, valued on a discounted cash flow basis, represents consideration of \$219. The combined entity is reported in our Asset Management business segment.

The fair values of the identifiable assets and liabilities acquired were:

	As at July 1, 2019
Intangible assets	\$ 238
Net assets	23
Deferred tax liabilities	(48)
Total identifiable net assets at fair value	213
Non-controlling interests ⁽¹⁾	(339)
Goodwill arising on acquisition	537
Total consideration	\$ 411

(1) We have elected to measure NCI at fair value for this acquisition. The fair value was determined by calculating the proportionate share of the present value of future cash flows relating to NCI. Significant assumptions inherent in the valuation of NCI include the estimated after-tax cash flows expected to be received and an assessment of the appropriate discount rate.

The fair values of the identifiable assets and liabilities are subject to refinement and may be retroactively adjusted to reflect new information obtained about facts and circumstances that existed at the acquisition date during the measurement period.

This transaction has two additional components (“Additional components”):

- A. We have the option to acquire the remaining outstanding shares in BGO commencing in 2026 (“call option”), and BGO minority shareholders have the option to require us to purchase their shares in 2027 (“put option”).

- B. In addition to our 56% ownership interest in BGO, we have acquired the right to 75% of former GreenOak shareholders' share of BGO's earnings for the period from July 2019 to December 2027. Consideration is to be paid in quarterly instalments over that period ("deferred payments").

The present values of the put option and deferred payments are calculated using our incremental borrowing rate; the subsequent interest expense recorded using the effective interest method will be recognized in the Consolidated Statements of Operations. Subsequent revisions to the expected exercise price payable for the put option will be recognized in the Consolidated Statements of Operations. If the put option expires unexercised or is cancelled, the carrying value of the financial liability will be released first to NCI, with excess amounts if any recognized against Retained earnings. If the call option is exercised, the liabilities relating to the Additional components will be extinguished and recognized against Retained earnings.

The Additional components are financial liabilities. Amounts were initially measured at the present value of \$951 for the put option and \$467 for the deferred payments in Other liabilities, with a corresponding reduction to NCI, limited to the original amount recorded upon the acquisition of BGO. Excess amounts were recognized against Retained earnings. At the date of acquisition, the impact to our assets, liabilities, and equity is as follows:

As at July 1, 2019	Share purchase	Additional components	Total
Cash consideration	\$ (192)	\$ –	\$ (192)
Net assets	23	–	23
Intangible assets	238	–	238
Goodwill ⁽¹⁾	537	–	537
Total assets	\$ 606	\$ –	\$ 606
Deferred tax liability	\$ (48)	\$ –	\$ (48)
Put option liability	–	(951)	(951)
Deferred payments liability	–	(467)	(467)
Total liabilities	\$ (48)	\$ (1,418)	\$ (1,466)
Non-controlling interests – Bentall Kennedy	\$ (171) ⁽²⁾	\$ 171	\$ –
Non-controlling interests – GreenOak ⁽³⁾	(339)	324	(15)
Retained earnings	(48) ⁽²⁾	923	875
Total equity	\$ (558)	\$ 1,418	\$ 860

(1) Goodwill of \$537 reflects GreenOak's non-contractual customer relationships. Approximately \$285 of goodwill is tax-deductible.

(2) The aggregate amount of \$219 represents the fair value of our interest in Bentall Kennedy transferred as consideration.

(3) The remaining \$15 represents specifically identifiable assets where the risks and rewards accrue to the former GreenOak shareholders and are distributed through a separate class of shares.

Acquisitions and Other in Asia

On October 3, 2017, we completed the first stage of our acquisition of the pension business of FWD Life Insurance Company (Bermuda) Limited ("FWD") for total consideration of approximately \$105. The first stage included the acquisition of the Mandatory Provident Fund business and the commencement of an exclusive 15-year distribution agreement with FWD that allows Sun Life Hong Kong Limited to distribute its pension products through FWD's agency force in Hong Kong. The completion of the second stage of the transaction involves the purchase of the Occupational Retirement Schemes Ordinance business of FWD, and is expected to close in 2020, subject to the receipt of regulatory approvals and satisfaction of customary closing conditions. These transactions will strengthen our position in the Hong Kong pension market and will be reported in our Asia business segment.

On October 17, 2019, we entered into a 15-year bancassurance partnership with Tien Phong Commercial Bank ("TPBank"). TPBank is fast growing with a strong Client focus, and is a digital leader in Vietnam. The new partnership aligns with our strategic priority to be a leader in Asia through distribution excellence. The agreement includes an initial payment of approximately \$107, which will be funded with internal resources. The initial payment will be capitalized as an intangible asset and will be amortized over 15 years based on a units-of-production method.

Pending Acquisition

On December 17, 2019, we entered into an agreement with InfraRed Capital Partners ("InfraRed"), a global infrastructure and real estate investment manager, to purchase 80% of the entity and the ability to acquire the remaining interest in the future. InfraRed will form part of our Asset Management business segment. The transaction is expected to close during the first half of 2020, subject to receipt of regulatory approvals and satisfaction of customary closing conditions.

4. Segmented Information

We have five reportable business segments: Canada, U.S., Asset Management, Asia, and Corporate. Prior to 2019, these business segments were referred to as SLF Canada, SLF U.S., SLF Asset Management, SLF Asia, and Corporate.

These business segments operate in the financial services industry and reflect our management structure and internal financial reporting. Corporate includes the results of our UK business unit and our Corporate Support operations, which include run-off reinsurance operations as well as investment income, expenses, capital, and other items not allocated to our other business groups.

Revenues from our business segments are derived principally from life and health insurance, investment management and annuities, and mutual funds. Revenues not attributed to the strategic business units are derived primarily from Corporate investments and earnings on capital. Transactions between segments are executed and priced at an arm's-length basis in a manner similar to transactions with third parties.

The expenses in each business segment may include costs or services directly incurred or provided on their behalf at the enterprise level. For other costs not directly attributable to one of our business segments, we use a management reporting framework that uses assumptions, judgments, and methodologies for allocating overhead costs, and indirect expenses to our business segments.

Intersegment transactions consist primarily of internal financing agreements which are measured at fair values prevailing when the arrangements are negotiated. Intersegment investment income consists primarily of interest paid by U.S. to Corporate. Intersegment fee income is primarily asset management fees paid by Canada and Corporate to Asset Management, and product distribution fees paid by Asset Management to Asia. Intersegment transactions are presented in the Consolidation adjustments column in the following tables.

Management considers its external Clients to be individuals and corporations. We are not reliant on any individual Client as none is individually significant to our operations.

Results by segment for the years ended December 31, are as follows:

	Canada	U.S.	Asset Management	Asia	Corporate	Consolidation adjustments	Total
2019							
Gross premiums:							
Annuities	\$ 3,276	\$ 1	\$ –	\$ 2	\$ 23	\$ –	\$ 3,302
Life insurance	5,178	1,605	–	2,597	90	–	9,470
Health insurance	5,629	4,232	–	31	16	–	9,908
Total gross premiums	14,083	5,838	–	2,630	129	–	22,680
Less: Ceded premiums	1,488	662	–	222	20	–	2,392
Net investment income (loss)	6,474	2,802	83	2,865	936	(20)	13,140
Fee income	1,320	86	4,309	531	149	(144)	6,251
Total revenue	20,389	8,064	4,392	5,804	1,194	(164)	39,679
Less:							
Total benefits and expenses	19,317	7,878	3,229	5,172	1,014	(164)	36,446
Income tax expense (benefit)	15	28	262	51	(70)	–	286
Total net income (loss)	\$ 1,057	\$ 158	\$ 901	\$ 581	\$ 250	\$ –	\$ 2,947
Less:							
Net income (loss) attributable to participating policyholders	174	(5)	–	61	–	–	230
Net income (loss) attributable to non-controlling interests	–	–	4	–	–	–	4
Shareholders' net income (loss)	\$ 883	\$ 163	\$ 897	\$ 520	\$ 250	\$ –	\$ 2,713
2018							
Gross premiums:							
Annuities	\$ 3,261	\$ –	\$ –	\$ 1	\$ (79)	\$ –	\$ 3,183
Life insurance	4,796	1,633	–	2,154	94	–	8,677
Health insurance	5,316	3,767	–	24	14	–	9,121
Total gross premiums	13,373	5,400	–	2,179	29	–	20,981
Less: Ceded premiums	1,487	597	–	232	23	–	2,339
Net investment income (loss)	1,942	305	13	76	79	(26)	2,389
Fee income	1,240	73	4,111	514	154	(126)	5,966
Total revenue	15,068	5,181	4,124	2,537	239	(152)	26,997
Less:							
Total benefits and expenses	13,497	5,183	2,930	1,919	109	(152)	23,486
Income tax expense (benefit)	308	(19)	284	51	(27)	–	597
Total net income (loss)	\$ 1,263	\$ 17	\$ 910	\$ 567	\$ 157	\$ –	\$ 2,914
Less:							
Net income (loss) attributable to participating policyholders	321	(35)	–	12	–	–	298
Shareholders' net income (loss)	\$ 942	\$ 52	\$ 910	\$ 555	\$ 157	\$ –	\$ 2,616

Assets and liabilities by segment are as follows:

	Canada	U.S.	Asset Management	Asia	Corporate	Consolidation adjustments	Total
As at December 31, 2019							
Total general fund assets	\$ 94,909	\$ 34,711	\$ 5,666	\$ 31,285	\$ 13,930	\$ (272)	\$ 180,229
Investments for account of segregated fund holders	\$ 98,758	\$ 514	\$ –	\$ 6,675	\$ 11,026	\$ –	\$ 116,973
Total general fund liabilities	\$ 86,847	\$ 31,044	\$ 4,250	\$ 25,750	\$ 8,102	\$ (272)	\$ 155,721
As at December 31, 2018							
Total general fund assets	\$ 86,697	\$ 34,584	\$ 4,468	\$ 28,855	\$ 14,378	\$ (217)	\$ 168,765
Investments for account of segregated fund holders	\$ 85,885	\$ 491	\$ –	\$ 6,173	\$ 10,513	\$ –	\$ 103,062
Total general fund liabilities	\$ 78,946	\$ 30,671	\$ 2,396	\$ 23,692	\$ 8,707	\$ (217)	\$ 144,195

The revenue and assets of our business segments differ from geographic segments primarily due to the geographic segmenting of our Asset Management and Corporate segments.

The following table shows revenue by country for Asset Management and Corporate:

For the years ended December 31,	Asset Management		Corporate	
	2019	2018	2019	2018
Revenue:				
United States	\$ 4,139	\$ 3,945	\$ 191	\$ 58
United Kingdom	32	–	903	142
Canada ⁽¹⁾	210	179	93	38
Other countries	11	–	7	1
Total revenue	\$ 4,392	\$ 4,124	\$ 1,194	\$ 239

(1) Consists of the Canadian operations of Bentall Kennedy and Sun Life Institutional Investments (Canada) Inc. for Asset Management.

The following table shows total assets by country for Asset Management and Corporate:

As at December 31,	Asset Management		Corporate	
	2019	2018	2019	2018
Total general fund assets:				
United States	\$ 4,770	\$ 4,147	\$ 2,329	\$ 2,550
United Kingdom	145	–	8,210	8,274
Canada ⁽¹⁾	534	321	3,202	3,384
Other countries	217	–	189	170
Total general fund assets	\$ 5,666	\$ 4,468	\$ 13,930	\$ 14,378
Investment for account of segregated fund holders:				
United Kingdom	\$ –	\$ –	\$ 11,026	\$ 10,513
Total investment for account of segregated fund holders	\$ –	\$ –	\$ 11,026	\$ 10,513

(1) Consists of the Canadian operations of Bentall Kennedy and Sun Life Institutional Investments (Canada) Inc. for Asset Management.

5. Total Invested Assets and Related Net Investment Income

5.A Fair Value of Invested Assets

5.A.i Carrying Value and Fair Value of Financial Assets

The carrying values and fair values of our financial assets are shown in the following table:

As at	December 31, 2019		December 31, 2018	
	Carrying value	Fair value	Carrying value	Fair value
Assets				
Cash, cash equivalents and short-term securities	\$ 9,575	\$ 9,575	\$ 9,506	\$ 9,506
Debt securities – fair value through profit or loss	67,894	67,894	61,402	61,402
Debt securities – available-for-sale ⁽¹⁾	13,712	13,712	13,041	13,041
Equity securities – fair value through profit or loss	4,474	4,474	4,014	4,014
Equity securities – available-for-sale	313	313	620	620
Mortgages and loans ⁽¹⁾	48,222	52,028	46,822	48,434
Derivative assets	1,548	1,548	1,112	1,112
Other invested assets – fair value through profit or loss ⁽²⁾	3,016	3,016	2,701	2,701
Other invested assets – available-for-sale ⁽²⁾	813	813	621	621
Policy loans	3,218	3,218	3,222	3,222
Total financial assets⁽³⁾	\$ 152,785	\$ 156,591	\$ 143,061	\$ 144,673

(1) As at December 31, 2019, the fair value of invested assets that have contractual cash flows that qualify as SPPI include \$13,602 of Debt securities – AFS (\$12,914 as at December 31, 2018), \$47,398 of Mortgages and loans supporting insurance contract liabilities (\$43,826 as at December 31, 2018), and \$4,315 of Mortgages and loans not supporting insurance contract liabilities (\$4,410 as at December 31, 2018).

(2) Other invested assets (FVTPL and AFS) include our investments in segregated funds, mutual funds and limited partnerships.

(3) Invested assets on our Consolidated Statements of Financial Position of \$161,619 (\$151,726 as at December 31, 2018) includes Total financial assets in this table, Investment properties of \$7,306 (\$7,157 as at December 31, 2018), and Other invested assets – non-financial assets of \$1,528 (\$1,508 as at December 31, 2018).

Our mortgages and loans are generally carried at amortized cost. The fair value of mortgages and loans, for disclosure purposes, is determined based on the methodology and assumptions described in Note 5.A.ii. As at December 31, 2019, \$41,858 and \$10,170 are categorized in Level 2 and Level 3, respectively, of the fair value hierarchy described in this Note (\$40,730 and \$7,704, respectively, as at December 31, 2018).

Derivative liabilities with a fair value of \$2,040 (\$2,295 as at December 31, 2018) are also included on the Consolidated Statements of Financial Position.

Policy loans are carried at their unpaid principal balances. The fair value of policy loans, for disclosure purposes, is approximated by their carrying value, as policy loans are fully secured by policy values on which the loans are made and are categorized in Level 2 of the fair value hierarchy.

5.A.ii Fair Value Methodologies and Assumptions

The fair value of government and corporate debt securities is determined using quoted prices in active markets for identical or similar securities. When quoted prices in active markets are not available, fair value is determined using market standard valuation methodologies, which include discounted cash flow analysis, consensus pricing from various broker dealers that are typically the market makers, or other similar techniques. The assumptions and valuation inputs in applying these market standard valuation methodologies are determined primarily using observable market inputs, which include, but are not limited to, benchmark yields, reported trades of identical or similar instruments, broker-dealer quotes, issuer spreads, bid prices, and reference data including market research publications. In limited circumstances, non-binding broker quotes are used.

The fair value of asset-backed securities is determined using quoted prices in active markets for identical or similar securities, when available, or valuation methodologies and valuation inputs similar to those used for government and corporate debt securities. Additional valuation inputs include structural characteristics of the securities, and the underlying collateral performance, such as prepayment speeds and delinquencies. Expected prepayment speeds are based primarily on those previously experienced in the market at projected future interest rate levels. In instances where there is a lack of sufficient observable market data to value the securities, non-binding broker quotes are used.

The fair value of equity securities is determined using quoted prices in active markets for identical securities or similar securities. When quoted prices in active markets are not available, fair value is determined using equity valuation models, which include discounted cash flow analysis and other techniques that involve benchmark comparison. Valuation inputs primarily include projected future operating cash flows and earnings, dividends, market discount rates, and earnings multiples of comparable companies.

The fair value of mortgages and loans is determined by discounting the expected future cash flows using a current market interest rate applicable to financial instruments with a similar yield, credit quality, and maturity characteristics. Valuation inputs typically include benchmark yields and risk-adjusted spreads from current lending activities or loan issuances. The risk-adjusted spreads are determined based on the borrower's credit and liquidity, as well as term and other loan-specific features. Long-term mortgages and loans are generally categorized in Level 3 of the fair value hierarchy. The significant unobservable input is a portion of these risk-adjusted spreads at or beyond the 20-year point for mortgages and at or beyond the 10-year point for loans.

The fair value of derivative financial instruments depends upon derivative types. The fair value of exchange-traded futures and options is determined using quoted prices in active markets, while the fair value of over-the-counter ("OTC") derivatives is determined using pricing models, such as discounted cash flow analysis or other market standard valuation techniques, with primarily observable market inputs. Valuation inputs used to price OTC derivatives may include swap interest rate curves, foreign exchange spot and forward rates, index prices, the value of underlying securities, projected dividends, volatility surfaces, and in limited circumstances, counterparty quotes. The fair value of OTC derivative financial instruments also includes credit valuation adjustments to reflect the credit risk of both the derivative counterparty and ourselves as well as the impact of contractual factors designed to reduce our credit exposure, such as collateral and legal rights of offset under master netting agreements. Inputs into determining the appropriate credit valuation adjustments are typically obtained from publicly available information and include credit default swap spreads when available, credit spreads derived from specific bond yields, or published cumulative default experience data adjusted for current trends when credit default swap spreads are not available.

The fair value of other invested assets is determined using quoted prices in active markets for identical securities or similar securities. When quoted prices in active markets are not available, fair value is determined using equity valuation models, which include discounted cash flow analysis and other techniques that involve benchmark comparison. Valuation inputs primarily include projected future operating cash flows and earnings, dividends, market discount rates, and earnings multiples of comparable companies.

The fair value of investment properties is generally determined using property valuation models that are based on expected capitalization rates and models that discount expected future net cash flows at current market interest rates reflective of the characteristics, location, and market of each property. Expected future net cash flows include contractual and projected cash flows and forecasted operating expenses, and take into account interest, rental, and occupancy rates derived from market surveys. The estimates of future cash inflows in addition to expected rental income from current leases, include projected income from future leases based on significant assumptions that are consistent with current market conditions. The future rental rates are estimated based on the location, type, and quality of the properties, and take into account market data and projections at the valuation date. The fair values are typically compared to market-based information for reasonability, including recent transactions involving comparable assets. The methodologies and inputs used in these models are in accordance with real estate industry valuation standards. Valuations are prepared externally or internally by professionally accredited real estate appraisers.

The fair value of short-term securities is approximated by their carrying amount, adjusted for credit risk where appropriate.

The fair value of investments for account of segregated fund holders is determined using quoted prices in active markets or independent valuation information provided by investment managers. The fair value of direct investments within investments for account of segregated fund holders, such as short-term securities and government and corporate debt securities, is determined according to valuation methodologies and inputs described above in the respective asset type sections.

The methodologies and assumptions for determining the fair values of investment contract liabilities are included in Note 10.B.

5.A.iii Fair Value Hierarchy

We categorize our assets and liabilities carried at fair value, based on the priority of the inputs to the valuation techniques used to measure fair value, into a three-level fair value hierarchy as follows:

Level 1: Fair value is based on the unadjusted quoted prices for identical assets or liabilities in an active market. The types of assets and liabilities classified as Level 1 generally include cash and cash equivalents, certain U.S. government and agency securities, exchange-traded equity securities, and certain segregated and mutual fund units held for account of segregated fund holders.

Level 2: Fair value is based on quoted prices for similar assets or liabilities traded in active markets, or prices from valuation techniques that use significant observable inputs, or inputs that are derived principally from or corroborated with observable market data through correlation or other means. The types of assets and liabilities classified as Level 2 generally include Canadian federal, provincial and municipal government, other foreign government and corporate debt securities, certain asset-backed securities, OTC derivatives, and certain segregated and mutual fund units held for account of segregated fund holders.

Level 3: Fair value is based on valuation techniques that require one or more significant inputs that are not based on observable market inputs. These unobservable inputs reflect our expectations about the assumptions market participants would use in pricing the asset or liability. The types of assets and liabilities classified as Level 3 generally include certain corporate bonds, certain other invested assets, investment properties and the Put option liability.

Our assets and liabilities that are carried at fair value on a recurring basis by hierarchy level are as follows:

As at	December 31, 2019				December 31, 2018			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets								
Cash, cash equivalents and short-term securities	\$ 9,044	\$ 531	\$ –	\$ 9,575	\$ 8,926	\$ 580	\$ –	\$ 9,506
Debt securities – fair value through profit or loss	1,641	66,005	248	67,894	1,253	59,776	373	61,402
Debt securities – available-for-sale	1,363	12,299	50	13,712	1,513	11,485	43	13,041
Equity securities – fair value through profit or loss	1,868	2,418	188	4,474	1,967	1,845	202	4,014
Equity securities – available-for-sale	152	126	35	313	398	186	36	620
Derivative assets	20	1,528	–	1,548	27	1,085	–	1,112
Other invested assets	1,000	384	2,445	3,829	898	183	2,241	3,322
Investment properties	–	–	7,306	7,306	–	–	7,157	7,157
Total invested assets measured at fair value	\$ 15,088	\$ 83,291	\$ 10,272	\$ 108,651	\$ 14,982	\$ 75,140	\$ 10,052	\$ 100,174
Investments for account of segregated fund holders	26,380	90,044	549	116,973	24,705	76,761	1,596	103,062
Total assets measured at fair value	\$ 41,468	\$ 173,335	\$ 10,821	\$ 225,624	\$ 39,687	\$ 151,901	\$ 11,648	\$ 203,236
Liabilities								
Investment contract liabilities	\$ –	\$ –	\$ 2	\$ 2	\$ –	\$ –	\$ 3	\$ 3
Derivative liabilities	14	2,026	–	2,040	11	2,284	–	2,295
Put option liability	–	–	956	956	–	–	–	–
Total liabilities measured at fair value	\$ 14	\$ 2,026	\$ 958	\$ 2,998	\$ 11	\$ 2,284	\$ 3	\$ 2,298

Debt securities – fair value through profit or loss consist of the following:

As at	December 31, 2019				December 31, 2018			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Canadian federal government	\$ –	\$ 3,875	\$ 15	\$ 3,890	\$ –	\$ 3,815	\$ 15	\$ 3,830
Canadian provincial and municipal government	–	13,811	15	13,826	–	11,852	14	11,866
U.S. government and agency	1,641	106	1	1,748	1,253	125	2	1,380
Other foreign government	–	5,172	9	5,181	–	4,895	34	4,929
Corporate	–	37,508	173	37,681	–	34,665	205	34,870
Asset-backed securities:								
Commercial mortgage-backed securities	–	1,753	6	1,759	–	1,464	3	1,467
Residential mortgage-backed securities	–	2,176	–	2,176	–	1,961	–	1,961
Collateralized debt obligations	–	157	–	157	–	143	–	143
Other	–	1,447	29	1,476	–	856	100	956
Total debt securities – fair value through profit or loss	\$ 1,641	\$ 66,005	\$ 248	\$ 67,894	\$ 1,253	\$ 59,776	\$ 373	\$ 61,402

Debt securities – available-for-sale consist of the following:

As at	December 31, 2019				December 31, 2018			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Canadian federal government	\$ –	\$ 2,556	\$ –	\$ 2,556	\$ –	\$ 1,746	\$ –	\$ 1,746
Canadian provincial and municipal government	–	1,139	–	1,139	–	1,199	–	1,199
U.S. government and agency	1,363	–	–	1,363	1,513	14	–	1,527
Other foreign government	–	735	1	736	–	716	1	717
Corporate	–	5,039	45	5,084	–	4,971	42	5,013
Asset-backed securities:								
Commercial mortgage-backed securities	–	777	–	777	–	766	–	766
Residential mortgage-backed securities	–	362	–	362	–	386	–	386
Collateralized debt obligations	–	730	–	730	–	804	–	804
Other	–	961	4	965	–	883	–	883
Total debt securities – available-for-sale	\$ 1,363	\$ 12,299	\$ 50	\$ 13,712	\$ 1,513	\$ 11,485	\$ 43	\$ 13,041

During 2019 and 2018, we did not have any significant transfers between Level 1 and Level 2.

The following table provides a reconciliation of the beginning and ending balances for assets and liabilities that are categorized in Level 3:

For the year ended	Debt securities – fair value through profit or loss	Debt securities – available-for-sale	Equity securities – fair value through profit or loss	Equity securities – available-for-sale	Other invested assets	Investment properties	Total invested assets measured at fair value	Investments for account of segregated fund holders	Total assets measured at fair value	Put option liability
December 31, 2019										
Beginning balance	\$ 373	\$ 43	\$ 202	\$ 36	\$ 2,241	\$ 7,157	\$ 10,052	\$ 1,596	\$ 11,648	\$ –
Acquisitions	–	–	–	–	13	–	13	–	13	951
Included in net income ⁽¹⁾⁽²⁾⁽³⁾	28	–	(2)	(23)	(80)	238	161	45	206	11
Included in OCI ⁽²⁾	–	4	–	2	13	–	19	–	19	–
Purchases	85	35	5	22	521	689	1,357	152	1,509	–
Sales / Payments	(49)	–	(9)	–	(122)	(701)	(881)	(59)	(940)	–
Settlements	(40)	–	–	–	–	–	(40)	(1)	(41)	–
Transfers into Level 3 ⁽⁴⁾	15	–	–	–	–	–	15	–	15	–
Transfers (out) of Level 3 ⁽⁴⁾⁽⁵⁾	(159)	(31)	(4)	–	(110)	–	(304)	(1,178)	(1,482)	–
Foreign currency translation ⁽⁶⁾	(5)	(1)	(4)	(2)	(31)	(77)	(120)	(6)	(126)	(6)
Ending balance	\$ 248	\$ 50	\$ 188	\$ 35	\$ 2,445	\$ 7,306	\$ 10,272	\$ 549	\$ 10,821	\$ 956
Gains (losses) included in earnings relating to instruments still held at the reporting date ⁽¹⁾	\$ 4	\$ –	\$ (3)	\$ –	\$ (78)	\$ 272	\$ 195	\$ 25	\$ 220	\$ –
December 31, 2018										
Beginning balance	\$ 417	\$ 136	\$ 167	\$ 38	\$ 1,721	\$ 7,067	\$ 9,546	\$ 1,154	\$ 10,700	\$ –
Included in net income ⁽¹⁾⁽²⁾⁽³⁾	(4)	–	9	–	69	441	515	29	544	–
Included in OCI ⁽²⁾	–	(5)	–	(8)	(9)	–	(22)	–	(22)	–
Purchases	164	140	19	4	644	621	1,592	430	2,022	–
Sales / Payments	(49)	(6)	–	(1)	(227)	(1,113)	(1,396)	(31)	(1,427)	–
Settlements	(21)	(4)	–	(1)	–	–	(26)	(1)	(27)	–
Transfers into Level 3 ⁽⁴⁾	12	1	–	1	–	–	14	4	18	–
Transfers (out) of Level 3 ⁽⁴⁾	(159)	(221)	–	–	–	–	(380)	(5)	(385)	–
Foreign currency translation ⁽⁶⁾	13	2	7	3	43	141	209	16	225	–
Ending balance	\$ 373	\$ 43	\$ 202	\$ 36	\$ 2,241	\$ 7,157	\$ 10,052	\$ 1,596	\$ 11,648	\$ –
Gains (losses) included in earnings relating to instruments still held at the reporting date ⁽¹⁾	\$ 5	\$ –	\$ 9	\$ –	\$ 69	\$ 331	\$ 414	\$ 27	\$ 441	\$ –

- (1) Included in Net investment income (loss) for Total invested assets measured at fair value in our Consolidated Statements of Operations.
- (2) Total gains and losses in net income (loss) and OCI are calculated assuming transfers into or out of Level 3 occur at the beginning of the period. For an asset or liability that transfers into Level 3 during the reporting period, the entire change in fair value for the period is included in the table above. For transfers out of Level 3 during the reporting period, the change in fair value for the period is excluded from the table above.
- (3) Investment properties included in net income is comprised of fair value changes on investment properties of \$305 (\$529 in 2018), net of amortization of leasing commissions and tenant inducements of \$67 (\$88 in 2018).
- (4) Transfers into Level 3 occur when the inputs used to price the assets and liabilities lack observable market data, and as a result, no longer meet the Level 1 or 2 definitions at the reporting date. Transfers out of Level 3 occur when the pricing inputs become more transparent and satisfy the Level 1 or 2 criteria and are primarily the result of observable market data being available at the reporting date, thus removing the requirement to rely on inputs that lack observability.
- (5) An update of certain specific criteria used to determine the leveling classification of the financial instruments was made in 2019 to align with industry practice. This resulted in transfers out of Level 3, including \$1,178 for Investments for account of segregated fund holders as well as \$110 for Other invested assets, and transferred into Level 2 based on the availability of observable inputs and other criteria.
- (6) Foreign currency translation relates to the foreign exchange impact of translating Level 3 assets and liabilities of foreign subsidiaries from their functional currencies to Canadian dollars.

Unobservable Inputs and Sensitivity for Level 3 Assets and Liabilities

Our assets and liabilities categorized in Level 3 of the fair value hierarchy are primarily Investment properties, Debt securities, Other invested assets and the Put option liability.

The fair value of Investment properties is determined by using the discounted cash flow methodology as described in Note 5.A.ii. The key unobservable inputs used in the valuation of investment properties as at December 31, 2019 include the following:

- **Estimated rental value:** The estimated rental value is based on contractual rent and other local market lease transactions, net of reimbursable operating expenses. An increase (decrease) in the estimated rental value would result in a higher (lower) fair value. The estimated rental value varies depending on the property types, which include retail, office, and industrial properties. The estimated rental value (in dollars, per square foot, per annum) ranges from \$12.00 to \$76.00 for retail and office properties and from \$3.00 to \$15.00 for industrial properties.
- **Rental growth rate:** The rental growth rate is typically estimated based on expected market behaviour, which is influenced by the type of property and geographic region of the property. An increase (decrease) in the rental growth rate would result in a higher (lower) fair value. The rental growth rate (per annum) ranges from 0.00% to 3.00%, however the one- to two-year short-term rent curve is either below or above this range for select properties.
- **Long-term vacancy rate:** The long-term vacancy rate is typically estimated based on expected market behaviour, which is influenced by the type of property and geographic region of the property. An increase (decrease) in the long-term vacancy rate would result in a lower (higher) fair value. The long-term vacancy rate ranges from 2.00% to 10.00%.
- **Discount rate:** The discount rate is derived from market activity across various property types and geographic regions and is a reflection of the expected rate of return to be realized on the investment over the next 10 years. An increase (decrease) in the discount rate would result in a lower (higher) fair value. The discount rate ranges from 4.00% to 10.25%.
- **Terminal capitalization rate:** The terminal capitalization rate is derived from market activity across various property types and geographic regions and is a reflection of the expected rate of return to be realized on the investment over the remainder of its life after the 10-year period. An increase (decrease) in the terminal capitalization rate would result in a lower (higher) fair value. The terminal capitalization rate ranges from 4.25% to 8.75%.

Changes in the estimated rental value are positively correlated with changes in the rental growth rate. Changes in the estimated rental value are negatively correlated with changes in the long-term vacancy rate, the discount rate, and the terminal capitalization rate.

Our Debt securities categorized in Level 3, which are included in Debt securities – FVTPL and Debt securities – AFS in the Level 3 roll forward table, consist primarily of corporate bonds. The fair value of these corporate bonds is generally determined using broker quotes that cannot be corroborated with observable market transactions. Significant unobservable inputs for these corporate bonds would include issuer spreads, which are comprised of credit, liquidity, and other security-specific features of the bonds. An increase (decrease) in these issuer spreads would result in a lower (higher) fair value. Due to the unobservable nature of these broker quotes, we do not assess whether applying reasonably possible alternative assumptions would have an impact on the fair value of the Level 3 corporate bonds. The majority of our debt securities categorized in Level 3 are FVTPL assets supporting insurance contract liabilities. Changes in the fair value of these assets supporting insurance contract liabilities are largely offset by changes in the corresponding insurance contract liabilities under CALM. As a result, though using reasonably possible alternative assumptions may have an impact on the fair value of the Level 3 debt securities, it would not have a significant impact on our Consolidated Financial Statements.

The Other invested assets categorized in Level 3, which are included in Other invested assets – FVTPL and Other invested assets – AFS in the Level 3 roll forward table, consists primarily of limited partnership investments. The fair value of our limited partnership investments is based on net asset value (“NAV”) provided by management of the limited partnership investments. Based on the unobservable nature of these NAVs, we do not assess whether applying reasonably possible alternative assumptions would have an impact on the fair value of the Level 3 limited partnership investments.

The fair value of the Put option liability related to the BGO acquisition is determined by using the discounted cash flow methodology. After initial recognition, the discount rate will remain unchanged. The Put option liability categorized in Level 3 represents the present value of the estimated price we would pay to acquire the remaining outstanding shares in BGO if the put option is exercised by the BGO minority shareholders. The fair value of this liability is based on the average earnings before income tax, depreciation and amortization (“EBITDA”) for the preceding two years before the option’s exercise date and an EBITDA multiple in accordance with the put agreement. Changes in the EBITDA multiple are positively correlated with changes in EBITDA. A change in EBITDA would impact the fair value of the Put option liability and our net income (loss).

Sensitivity Analysis

The following table represents the sensitivity analysis of key assumptions relating to the Put option liability for 2019:

Change in EBITDA	10% decrease	10% increase
Potential impact on net income (loss)	\$ 130	\$ (141)

Valuation Process for Level 3 Assets and Liabilities

Our assets and liabilities categorized in Level 3 of the fair value hierarchy are primarily Investment properties, Debt securities, limited partnership investments included in Other invested assets, and the Put option liability. Our valuation processes for these assets are as follows:

The fair value of investment properties are based on the results of appraisals performed annually and reviewed quarterly for material changes. The valuation methodology used to determine the fair value is in accordance with the standards of the Appraisal Institute of Canada, the U.S., and the UK. Investment properties are appraised externally at least once every three years. Investment properties not appraised externally in a given year are reviewed by qualified appraisers. A management committee, including investment professionals, reviews the fair value of investment properties for overall reasonability.

The fair value of Debt securities is generally obtained by external pricing services. We obtain an understanding of inputs and valuation methods used by external pricing services. When fair value cannot be obtained from external pricing services, broker quotes, or internal models subject to detailed review and validation processes are used. The fair value of debt securities is subject to price validation and review procedures to ensure overall reasonability.

The fair value of limited partnership investments, included in Other invested assets, is based on NAV. The financial statements used in calculating the NAV are generally audited annually. We review the NAV of the limited partnership investments and perform analytical and other procedures to ensure the fair value is reasonable.

The fair value of the Put option liability is mainly based on the forecasted EBITDA of BGO at various multiples as stipulated in the put agreement. The financial results and forecasted EBITDA of BGO are reviewed annually, and we perform analytical procedures to ensure the fair value is reasonable.

5.B Interest and Other Investment Income

Interest and other investment income presented in our Consolidated Statements of Operations consist of the following:

For the years ended December 31,	2019	2018
Interest income:		
Cash, cash equivalents and short-term securities	\$ 164	\$ 131
Debt securities – fair value through profit or loss	2,395	2,312
Debt securities – available-for-sale	411	384
Mortgages and loans	2,208	2,050
Derivative investments	30	45
Policy loans	188	175
Total interest income	5,396	5,097
Equity securities – dividends on fair value through profit or loss	137	160
Equity securities – dividends on available-for-sale	8	14
Investment properties rental income ⁽¹⁾	575	594
Investment properties expenses	(252)	(259)
Other income	196	242
Investment expenses and taxes	(205)	(207)
Total interest and other investment income	\$ 5,855	\$ 5,641

(1) Includes operating lease rental income from investment properties.

5.C Fair Value and Foreign Currency Changes on Assets and Liabilities

Fair value and foreign currency changes on assets and liabilities presented in our Consolidated Statements of Operations consist of the following:

For the years ended December 31,	2019	2018
Fair value change:		
Cash, cash equivalents and short-term securities	\$ (2)	\$ 8
Debt securities	5,686	(2,704)
Equity securities	629	(401)
Derivative investments	772	(1,295)
Other invested assets	77	16
Total change in fair value through profit or loss assets and liabilities	7,162	(4,376)
Fair value changes on investment properties	305	529
Foreign exchange gains (losses) ⁽¹⁾	(349)	446
Realized gains (losses) on property and equipment ⁽²⁾	–	28
Fair value and foreign currency changes on assets and liabilities	\$ 7,118	\$ (3,373)

(1) Primarily arises from the translation of foreign currency denominated AFS monetary assets and mortgage and loans. Any offsetting amounts arising from foreign currency derivatives are included in the fair value change on derivative investments.

(2) In 2018, we sold and leased back a property in Waterloo, Ontario. The transaction qualified as a sale and operating lease and as a result, we recognized a gain of \$28.

5.D Cash, Cash Equivalents and Short-Term Securities

Cash, cash equivalents and short-term securities presented in our Consolidated Statements of Financial Position and Net cash, cash equivalents and short-term securities presented in our Consolidated Statements of Cash Flows consist of the following:

As at December 31,	2019	2018
Cash	\$ 1,656	\$ 2,089
Cash equivalents	5,059	5,209
Short-term securities	2,860	2,208
Cash, cash equivalents and short-term securities	9,575	9,506
Less: Bank overdraft, recorded in Other liabilities	30	104
Net cash, cash equivalents and short-term securities	\$ 9,545	\$ 9,402

5.E Derivative Financial Instruments and Hedging Activities

The fair values of derivative financial instruments by major class of derivatives are as follows:

As at December 31,	2019		2018	
	Fair value		Fair value	
	Assets	Liabilities	Assets	Liabilities
Interest rate contracts	\$ 1,198	\$ (517)	\$ 922	\$ (440)
Foreign exchange contracts	242	(1,516)	130	(1,820)
Other contracts	108	(7)	60	(35)
Total derivatives	\$ 1,548	\$ (2,040)	\$ 1,112	\$ (2,295)

The following table presents the fair values of derivative assets and liabilities categorized by type of hedge for accounting purposes and derivative investments:

As at December 31,	2019			2018		
	Total notional amount	Fair value		Total notional amount	Fair value	
		Assets	Liabilities		Assets	Liabilities
Derivative investments ⁽¹⁾	\$ 60,707	\$ 1,517	\$ (1,831)	\$ 58,268	\$ 1,101	\$ (2,134)
Fair value hedges	616	–	(208)	779	–	(153)
Cash flow hedges	808	31	(1)	151	11	(8)
Total derivatives	\$ 62,131	\$ 1,548	\$ (2,040)	\$ 59,198	\$ 1,112	\$ (2,295)

(1) Derivative investments are derivatives that have not been designated as hedges for accounting purposes.

We did not have any net investment hedges in 2019 or 2018.

Hedge ineffectiveness recognized in Interest and other investment income consists of the following:

For the years ended December 31,	2019	2018
Fair value hedging ineffectiveness:		
Gains (losses) on the hedged items attributable to the hedged risk	\$ 71	\$ (41)
Gains (losses) on the hedging derivatives	(64)	40
Net ineffectiveness on fair value hedges	\$ 7	\$ (1)

For cash flow hedges, we had hedge ineffectiveness of \$1 in 2019 (\$1 in 2018). We expect to reclassify a gain of \$7 from accumulated OCI to net income within the next 12 months that relates to cash flow hedges of anticipated award payments under certain share-based payment plans that are expected to occur in 2020, 2021 and 2022. The reclassification of accumulated OCI to income relating to these foreign currency forwards occurs upon disposal or impairment of the foreign operation.

5.F Transfers of Financial Assets

We enter into transactions, including mortgage securitization, repurchase agreements and securities lending, where we transfer financial assets while retaining the risks and rewards of ownership of the assets. These transferred financial assets are not derecognized and remain on our Consolidated Statements of Financial Position. The carrying value of the transferred assets and the associated liabilities are described in the sections below.

5.F.i Mortgage Securitization

We securitize certain insured fixed-rate commercial mortgages through the creation of mortgage-backed securities under the National Housing Act Mortgage-Backed Securities (“NHA MBS”) Program sponsored by the Canada Mortgage and Housing Corporation (“CMHC”). The NHA MBS are then sold to Canada Housing Trust, a government-sponsored security trust that issues securities to third-party investors under the Canadian Mortgage Bond (“CMB”) program. The securitization of these assets does not qualify for derecognition as we have not transferred substantially all of the risks and rewards of ownership. Specifically, we continue to be exposed to pre-payment and interest rate risk associated with these assets. There are no expected credit losses on the securitized mortgages, as the mortgages were already insured by the CMHC prior to securitization. These assets continue to be recognized as Mortgages and loans in our Consolidated Statements of Financial Position. Proceeds from securitization transactions are recognized as secured borrowings and included in Other liabilities in our Consolidated Statements of Financial Position.

Receipts of principal on the securitized mortgages are deposited into a principal reinvestment account (“PRA”) to meet our repayment obligation upon maturity under the CMB program. The assets in the PRA are typically comprised of cash and cash equivalents and certain asset-backed securities. We are exposed to reinvestment risk due to the amortizing nature of the securitized mortgages relative to our repayment obligation for the full principal amount due at maturity. We mitigate this reinvestment risk using interest rate swaps.

The carrying value and fair value of the securitized mortgages as at December 31, 2019 are \$1,587 and \$1,592, respectively (\$1,328 and \$1,318, respectively, as at December 31, 2018). The carrying value and fair value of the associated liabilities as at December 31, 2019 are \$1,715 and \$1,734, respectively (\$1,453 and \$1,446, respectively, as at December 31, 2018). The carrying value of asset-backed securities in the PRA as at December 31, 2019 is \$124 (\$124 as at December 31, 2018). There are no cash and cash equivalents in the PRA as at December 31, 2019 and 2018.

The fair value of the secured borrowings from mortgage securitization is based on the methodologies and assumptions for asset-backed securities described in Note 5.A.ii. The fair value of these liabilities is categorized in Level 2 of the fair value hierarchy as at December 31, 2019 and 2018.

5.F.ii Repurchase Agreements

We enter into repurchase agreements for operational funding and liquidity purposes. Repurchase agreements have maturities ranging from 8 to 365 days, averaging 87 days, and bear interest at an average rate of 1.81% as at December 31, 2019 (1.92% as at December 31, 2018). The carrying values of the transferred assets and the obligations related to their repurchase, which approximate their fair values, are \$1,850 as at December 31, 2019 (\$1,824 as at December 31, 2018). These liabilities are categorized in Level 2 of the fair value hierarchy. Collateral primarily consists of cash and cash equivalents as well as government guaranteed securities. Details on the collateral pledged are included in Note 6.A.ii.

5.F.iii Securities Lending

The Company engages in securities lending to generate additional income. Certain securities from its portfolio are lent to other institutions for short periods. Collateral exceeding the fair value of the securities lent is deposited by the borrower with a lending agent, usually a securities custodian, and maintained by the lending agent until the underlying security has been returned to us. The fair value of the securities lent is monitored on a daily basis with additional collateral obtained or refunded as the fair values fluctuate. Collateral primarily consists of Canadian federal and provincial government securities and cash and cash equivalents. Certain arrangements allow us to invest the cash collateral received for the securities lent. The carrying values of the securities lent approximate their fair values. The carrying values of the securities lent and the related collateral held are \$2,006 and \$2,128, respectively, as at December 31, 2019 (\$2,217 and \$2,338, respectively, as at December 31, 2018).

6. Financial Instrument Risk Management

The significant risks related to financial instruments are credit risk, market risk (including equity risk, interest rate and spread risk, and foreign currency risk) and liquidity risk. The following sections describe how we manage these risks.

Some of our financial instruments risk management policies and procedures are described in our Annual Management's Discussion and Analysis ("MD&A") for the year ended December 31, 2019. The shaded text and tables in the Risk Management section of the MD&A represent part of our disclosures on credit, market and liquidity risks and include a description of how we measure our risk and our objectives, policies and methodologies for managing these risks. Therefore, the shaded text and tables are an integral part of these Consolidated Financial Statements.

We use derivative instruments to manage market risks related to equity market, interest rate and currency fluctuations and in replication strategies for permissible investments. We do not engage in speculative investment in derivatives. The gap in market sensitivities or exposures between liabilities and supporting assets is monitored and managed within defined tolerance limits, by using derivative instruments, where appropriate. We use models and techniques to measure the effectiveness of our risk management strategies.

6.A Credit Risk

Risk Description

Credit risk is the possibility of loss from amounts owed by our borrowers or financial counterparties. We are subject to credit risk in connection with issuers of securities held in our investment portfolio, debtors, structured securities, reinsurers, counterparties (including derivative, repurchase agreement and securities lending counterparties), other financial institutions and other entities. Losses may occur when a counterparty fails to make timely payments pursuant to the terms of the underlying contractual arrangement or when the counterparty's credit rating or risk profile otherwise deteriorates. Credit risk can also arise in connection with deterioration in the value of, or ability to realize, any underlying security that may be used as collateral for the debt obligation. Credit risk can occur as a result of broad economic conditions, challenges within specific sectors of the economy, or from issues affecting individual companies. Events that result in defaults, impairments or downgrades of the securities in our investment portfolio would cause the Company to record realized or unrealized losses and may cause an increase in our provisions for asset default, adversely impacting earnings.

Credit Risk Management Governance and Control

We employ a wide range of credit risk management practices and controls, as outlined below:

- Credit risk governance practices are in place, including independent monitoring and review and reporting to senior management and the Risk & Conduct Review Committee.
- Risk appetite limits have been established for credit risk.
- Income and regulatory capital sensitivities are monitored, managed and reported against pre-established risk limits.
- Comprehensive Investment and Credit Risk Management Policy, guidelines and practices are in place.
- Specific investment diversification requirements are in place, such as defined investment limits for asset class, geography, and industry.
- Risk-based credit portfolio, counterparty, and sector exposure limits have been established.
- Mandatory use of credit quality ratings for portfolio investments has been established and is reviewed regularly. These internal rating decisions for new fixed income investments and ongoing review of existing rating decisions are independently adjudicated by Corporate Risk Management.
- Comprehensive due diligence processes and ongoing credit analyses are conducted.
- Regulatory solvency requirements include risk-based capital requirements and are monitored regularly.
- Comprehensive compliance monitoring practices and procedures including reporting against pre-established investment limits are in place.
- Reinsurance exposures are monitored to ensure that no single reinsurer represents an undue level of credit risk.
- Stress-testing techniques, such as Dynamic Capital Adequacy Testing ("DCAT"), are used to measure the effects of large and sustained adverse credit developments. In 2020, the Canadian Institute of Actuaries will replace DCAT with Financial Condition Testing ("FCT"). FCT, similar to DCAT, will continue to act as a key stress-testing technique for the organization. FCT's testing is broader than DCAT and allows for harmonization with the Company's Own Risk Solvency Assessment ("ORSA").

- Insurance contract liabilities are established in accordance with Canadian actuarial standards of practice.
- Internal capital targets are established at an enterprise level to cover all risks and are above minimum regulatory and supervisory levels. Actual capital levels are monitored to ensure they exceed internal targets.

6.A.i Maximum Exposure to Credit Risk

Our maximum credit exposure related to financial instruments as at December 31 is the balance as presented in our Consolidated Statements of Financial Position as we believe that these carrying amounts best represent the maximum exposure to credit risk. The credit exposure for debt securities may be increased to the extent that the amounts recovered from default are insufficient to satisfy the actuarial liability cash flows that the assets are intended to support.

The positive fair value of derivative assets is used to determine the credit risk exposure if the counterparties were to default. The credit risk exposure is the cost of replacing, at current market rates, all derivative contracts with a positive fair value. Additionally, we have credit exposure to items not on the Consolidated Statements of Financial Position as follows:

As at December 31,	2019	2018
Off-balance sheet item:		
Loan commitments ⁽¹⁾	\$ 2,175	\$ 2,460

(1) Loan commitments include commitments to extend credit under commercial and multi-family residential mortgages and private debt securities not quoted in an active market. Commitments on debt securities contain provisions that allow for withdrawal of the commitment if there is deterioration in the credit quality of the borrower.

6.A.ii Right of Offset and Collateral

We invest in financial assets which may be secured by real estate properties, pools of financial assets, third-party financial guarantees, credit insurance, and other arrangements.

For OTC derivatives, collateral is collected from and pledged to counterparties to manage credit exposure according to the Credit Support Annex ("CSA"), which forms part of the International Swaps and Derivatives Association's ("ISDA") master agreements. It is common practice to execute a CSA in conjunction with an ISDA master agreement. Under the ISDA master agreements for OTC derivatives, we have a right of offset in the event of default, insolvency, bankruptcy, or other early termination. In the ordinary course of business, bilateral OTC exposures under these agreements are substantially mitigated through associated collateral agreements with a majority of our counterparties.

For exchange-traded derivatives subject to derivative clearing agreements with the exchanges and clearinghouses, there is no provision for set-off at default. Initial margin is excluded from the table below as it would become part of a pooled settlement process.

For repurchase agreements and reverse repurchase agreements, assets are sold or purchased with a commitment to resell or repurchase at a future date. Additional collateral may be pledged to or collected from counterparties to manage credit exposure according to bilateral repurchase or reverse repurchase agreements. In the event of default by a counterparty, we are entitled to liquidate the assets we hold as collateral to offset against obligations to the same counterparty.

In the case of securities lending, assets are lent with a commitment from the counterparty to return at a future date. Cash or securities are received as collateral from the counterparty. In the event of default by the counterparty, we are entitled to liquidate the assets we hold as collateral to offset against obligations to the same counterparty.

We do not offset financial instruments in our Consolidated Statements of Financial Position, as our rights of offset are conditional. The following tables present the effect of conditional netting and similar arrangements. Similar arrangements include global master repurchase agreements, security lending agreements, and any related rights to financial collateral.

As at December 31,	2019				2018				
	Financial instruments presented in the Consolidated Statements of Financial Position ⁽¹⁾	Related amounts not set off in the Consolidated Statements of Financial Position			Net amount	Financial instruments presented in the Consolidated Statements of Financial Position ⁽¹⁾	Related amounts not set off in the Consolidated Statements of Financial Position		
Financial instruments subject to master netting or similar agreements		Financial collateral (received) pledged ⁽²⁾		Financial instruments subject to master netting or similar agreements			Financial collateral (received) pledged ⁽²⁾		Net amount
Financial assets:									
Derivative assets (Note 6.A.v)	\$ 1,548	\$ (737)	\$ (730)	\$ 81	\$ 1,112	\$ (768)	\$ (298)	\$ 46	
Reverse repurchase agreements (Note 8)	3	(3)	–	–	17	(17)	–	–	
Total financial assets	\$ 1,551	\$ (740)	\$ (730)	\$ 81	\$ 1,129	\$ (785)	\$ (298)	\$ 46	
Financial liabilities:									
Derivative liabilities	\$ (2,040)	\$ 737	\$ 937	\$ (366)	\$ (2,295)	\$ 768	\$ 1,132	\$ (395)	
Repurchase agreements (Note 5.F.ii)	(1,850)	3	1,847	–	(1,824)	17	1,807	–	
Total financial liabilities	\$ (3,890)	\$ 740	\$ 2,784	\$ (366)	\$ (4,119)	\$ 785	\$ 2,939	\$ (395)	

(1) Net amounts of the financial instruments presented in our Consolidated Statements of Financial Position are the same as our gross recognized financial instruments, as we do not offset financial instruments in our Consolidated Statements of Financial Position.

(2) Financial collateral excludes overcollateralization and, for exchange-traded derivatives, initial margin. Total financial collateral, including initial margin and overcollateralization, received on derivative assets was \$939 (\$470 as at December 31, 2018), received on reverse repurchase agreements was \$3 (\$17 as at December 31, 2018), pledged on derivative liabilities was \$1,706 (\$1,726 as at December 31, 2018), and pledged on repurchase agreements was \$1,850 (\$1,824 as at December 31, 2018).

6.A.iii Concentration Risk

Concentrations of credit risk arise from exposures to a single debtor, a group of related debtors, or groups of debtors that have similar credit risk characteristics, such as groups of debtors in the same economic or geographic regions or in similar industries. Related issuers may have similar economic characteristics so that their ability to meet contractual obligations may be impacted similarly by changes in the economic or political conditions. We manage this risk by appropriately diversifying our investment portfolio through the use of concentration limits. In particular, we maintain policies which set counterparty exposure limits to manage the credit exposure for investments in any single issuer or to the same underlying credit. Exceptions exist for investments in securities which are issued or guaranteed by the Government of Canada, U.S. or UK and issuers for which the Risk & Conduct Review Committee have granted specific approval. Mortgages are collateralized by the related property, and generally do not exceed 75% of the value of the property at the time the original loan is made. Our mortgages and loans are diversified by type and location and, for mortgages, by borrower. Loans provide diversification benefits (name, industry and geography) and often provide stronger covenants and collateral than public debt securities, thereby providing both better credit protection and potentially higher recoveries in the event of default. The following tables provide details of the debt securities, mortgages and loans held by issuer country, geographic location and industry sector, where applicable.

The carrying value of debt securities by geographic location is shown in the following table. The geographic location is based on the country of the creditor's parent.

As at December 31,	2019			2018		
	Fair value through profit or loss	Available-for-sale	Total debt securities	Fair value through profit or loss	Available-for-sale	Total debt securities
Canada	\$ 28,221	\$ 5,031	\$ 33,252	\$ 25,091	\$ 4,217	\$ 29,308
United States	24,224	5,822	30,046	21,329	5,917	27,246
United Kingdom	4,874	528	5,402	5,092	565	5,657
Other	10,575	2,331	12,906	9,890	2,342	12,232
Balance	\$ 67,894	\$ 13,712	\$ 81,606	\$ 61,402	\$ 13,041	\$ 74,443

The carrying value of debt securities by issuer and industry sector is shown in the following table:

As at December 31,	2019			2018		
	Fair value through profit or loss	Available-for-sale	Total debt securities	Fair value through profit or loss	Available-for-sale	Total debt securities
Debt securities issued or guaranteed by:						
Canadian federal government	\$ 3,890	\$ 2,556	\$ 6,446	\$ 3,830	\$ 1,746	\$ 5,576
Canadian provincial and municipal government	13,826	1,139	14,965	11,866	1,199	13,065
U.S. government and agency	1,748	1,363	3,111	1,380	1,527	2,907
Other foreign government	5,181	736	5,917	4,929	717	5,646
Total government issued or guaranteed debt securities	24,645	5,794	30,439	22,005	5,189	27,194
Corporate debt securities by industry sector:						
Financials	9,341	1,585	10,926	8,390	1,470	9,860
Utilities	6,693	565	7,258	6,353	528	6,881
Industrials	4,800	629	5,429	4,053	590	4,643
Energy	3,867	365	4,232	3,628	340	3,968
Communication services ⁽¹⁾	3,075	471	3,546	2,826	481	3,307
Real estate	2,595	368	2,963	2,640	376	3,016
Health care	1,886	236	2,122	1,734	299	2,033
Consumer staples	1,703	221	1,924	1,625	257	1,882
Materials	1,331	212	1,543	1,225	256	1,481
Consumer discretionary ⁽¹⁾	1,268	219	1,487	1,372	209	1,581
Information technology ⁽¹⁾	1,122	213	1,335	1,024	207	1,231
Total corporate debt securities	37,681	5,084	42,765	34,870	5,013	39,883
Asset-backed securities	5,568	2,834	8,402	4,527	2,839	7,366
Total debt securities	\$ 67,894	\$ 13,712	\$ 81,606	\$ 61,402	\$ 13,041	\$ 74,443

(1) Our grouping of debt securities by sector is based on the Global Industry Classification Standard and S&P Dow Jones Indices. During 2018, certain Consumer discretionary and Information technology debt securities were moved to the Communication services sector.

The carrying value of mortgages and loans by geographic location and type is shown in the following tables. The geographic location for mortgages is based on location of property, while for corporate loans it is based on the country of the creditor's parent.

As at December 31, 2019	Canada	United States	United Kingdom	Other	Total
Mortgages:					
Retail	\$ 1,981	\$ 1,921	\$ –	\$ –	\$ 3,902
Office	1,854	2,068	–	–	3,922
Multi-family residential	3,900	1,791	–	–	5,691
Industrial and land	861	1,037	–	–	1,898
Other	714	98	–	–	812
Total mortgages⁽¹⁾	\$ 9,310	\$ 6,915	\$ –	\$ –	\$ 16,225
Loans	\$ 13,249	\$ 11,994	\$ 3,297	\$ 3,457	\$ 31,997
Total mortgages and loans	\$ 22,559	\$ 18,909	\$ 3,297	\$ 3,457	\$ 48,222

(1) \$3,966 of mortgages in Canada are insured by the CMHC.

As at December 31, 2018	Canada	United States	United Kingdom	Other	Total
Mortgages:					
Retail	\$ 1,921	\$ 2,281	\$ –	\$ –	\$ 4,202
Office	1,811	2,417	–	–	4,228
Multi-family residential	3,455	1,920	–	–	5,375
Industrial and land	752	1,154	–	–	1,906
Other	618	104	–	–	722
Total mortgages⁽¹⁾	\$ 8,557	\$ 7,876	\$ –	\$ –	\$ 16,433
Loans	\$ 13,238	\$ 11,458	\$ 2,547	\$ 3,146	\$ 30,389
Total mortgages and loans	\$ 21,795	\$ 19,334	\$ 2,547	\$ 3,146	\$ 46,822

(1) \$3,537 of mortgages in Canada are insured by the CMHC.

6.A.iv Contractual Maturities

The contractual maturities of debt securities are shown in the following table. Actual maturities could differ from contractual maturities because of the borrower's right to call or extend or right to prepay obligations, with or without prepayment penalties.

As at December 31,	2019			2018		
	Fair value through profit or loss	Available-for-sale	Total debt securities	Fair value through profit or loss	Available-for-sale	Total debt securities
Due in 1 year or less	\$ 2,094	\$ 2,025	\$ 4,119	\$ 2,189	\$ 1,175	\$ 3,364
Due in years 2-5	9,692	3,954	13,646	9,307	4,865	14,172
Due in years 6-10	9,655	3,301	12,956	10,080	2,580	12,660
Due after 10 years	46,453	4,432	50,885	39,826	4,421	44,247
Total debt securities	\$ 67,894	\$ 13,712	\$ 81,606	\$ 61,402	\$ 13,041	\$ 74,443

The carrying value of mortgages by scheduled maturity, before allowances for losses, is as follows:

As at December 31,	2019	2018
Due in 1 year or less	\$ 1,099	\$ 968
Due in years 2-5	5,255	5,118
Due in years 6-10	6,787	7,351
Due after 10 years	3,154	3,021
Total mortgages	\$ 16,295	\$ 16,458

The carrying value of loans by scheduled maturity, before allowances for losses, is as follows:

As at December 31,	2019	2018
Due in 1 year or less	\$ 1,834	\$ 1,425
Due in years 2-5	6,872	6,968
Due in years 6-10	5,449	5,183
Due after 10 years	17,889	16,863
Total loans	\$ 32,044	\$ 30,439

Notional amounts of derivative financial instruments are the basis for calculating payments and are generally not the actual amounts exchanged. The following table provides the notional amounts of derivative instruments outstanding by type of derivative and term to maturity:

As at December 31,	2019				2018			
	Term to maturity				Term to maturity			
	Under 1 Year	1 to 5 Years	Over 5 Years	Total	Under 1 Year	1 to 5 Years	Over 5 Years	Total
Over-the-counter contracts:								
Interest rate contracts:								
Forward contracts	\$ 50	\$ -	\$ -	\$ 50	\$ -	\$ -	\$ -	\$ -
Swap contracts	1,906	3,052	14,649	19,607	1,101	3,506	16,685	21,292
Options purchased	617	3,279	2,850	6,746	1,198	2,898	3,737	7,833
Options written ⁽¹⁾	357	474	-	831	477	648	225	1,350
Foreign exchange contracts:								
Forward contracts	5,289	4,137	-	9,426	6,529	15	-	6,544
Swap contracts	867	3,723	12,366	16,956	532	4,451	9,210	14,193
Other contracts:								
Options purchased	1,164	-	-	1,164	-	-	-	-
Forward contracts	128	176	-	304	127	158	-	285
Swap contracts	178	1	-	179	112	1	-	113
Credit derivatives	343	878	6	1,227	-	1,329	27	1,356
Exchange-traded contracts:								
Interest rate contracts:								
Futures contracts	2,917	-	-	2,917	3,669	-	-	3,669
Equity contracts:								
Futures contracts	2,507	-	-	2,507	2,377	-	-	2,377
Options purchased	200	-	-	200	186	-	-	186
Options written	17	-	-	17	-	-	-	-
Total notional amount	\$ 16,540	\$ 15,720	\$ 29,871	\$ 62,131	\$ 16,308	\$ 13,006	\$ 29,884	\$ 59,198

(1) These are covered short derivative positions that may include interest rate options, swaptions, or floors.

The following table provides the fair value of derivative instruments outstanding by term to maturity:

As at December 31,	2019				2018			
	Term to maturity				Term to maturity			
	Under 1 Year	1 to 5 Years	Over 5 Years	Total	Under 1 Year	1 to 5 Years	Over 5 Years	Total
Derivative assets	\$ 180	\$ 231	\$ 1,137	\$ 1,548	\$ 100	\$ 150	\$ 862	\$ 1,112
Derivative liabilities	\$ (73)	\$ (377)	\$ (1,590)	\$ (2,040)	\$ (240)	\$ (555)	\$ (1,500)	\$ (2,295)

6.A.v Asset Quality

The following sections describe our assessment of the credit quality of our financial assets. We monitor credit quality based on internal risk ratings as well as ratings assigned by external rating agencies where available.

Debt Securities by Credit Rating

Investment grade debt securities are those rated BBB and above. Our debt security portfolio was 99% investment grade based on carrying value as at December 31, 2019 (99% as at December 31, 2018). The credit risk ratings were established in accordance with the internal rating process described in the Credit Risk Management Governance and Control section.

The following table summarizes our debt securities by credit quality:

As at December 31,	2019			2018		
	Fair value through profit or loss	Available-for-sale	Total debt securities	Fair value through profit or loss	Available-for-sale	Total debt securities
	Debt securities by credit rating:					
AAA	\$ 11,097	\$ 6,630	\$ 17,727	\$ 9,728	\$ 5,919	\$ 15,647
AA	10,503	1,670	12,173	14,208	2,044	16,252
A	27,341	3,037	30,378	19,089	2,447	21,536
BBB	18,339	2,248	20,587	17,646	2,483	20,129
BB and lower	614	127	741	731	148	879
Total debt securities	\$ 67,894	\$ 13,712	\$ 81,606	\$ 61,402	\$ 13,041	\$ 74,443

Mortgages and Loans by Credit Rating

The credit quality of mortgages and loans is evaluated internally through regular monitoring of credit-related exposures. We use judgment and experience to determine what factors should be considered when assigning an internal credit rating, which is validated through the use of credit scoring models, to a particular mortgage or corporate loan. The internal credit ratings reflect the credit quality of the borrower as well as the value of any collateral held as security.

The following tables summarize our mortgages and loans by credit quality indicator:

As at December 31,	2019	2018
Mortgages by credit rating:		
Insured	\$ 3,966	\$ 3,537
AAA	1	3
AA	2,087	2,209
A	5,481	4,841
BBB	3,943	4,925
BB and lower	670	912
Impaired	77	6
Total mortgages	\$ 16,225	\$ 16,433

As at December 31,	2019	2018
Loans by credit rating:		
AAA	\$ 224	\$ 341
AA	5,044	4,659
A	12,516	11,483
BBB	12,920	12,766
BB and lower	1,207	1,097
Impaired	86	43
Total loans	\$ 31,997	\$ 30,389

Derivative Financial Instruments by Counterparty Credit Rating

Derivative instruments consist of bilateral OTC contracts negotiated directly between counterparties, OTC contracts cleared through central clearing houses or exchange-traded contracts. Since a counterparty failure in an OTC derivative transaction could render it ineffective for hedging purposes, we generally transact our derivative contracts with highly-rated counterparties. In limited circumstances, we enter into transactions with lower-rated counterparties if credit enhancement features are included.

We pledge and hold assets as collateral under CSAs for bilateral OTC derivative contracts. The collateral is realized in the event of early termination as defined in the agreements. The assets held and pledged are primarily cash and debt securities issued by the Canadian federal government and U.S. government and agencies. While we are generally permitted to sell or re-pledge the assets held as collateral, we have not sold or re-pledged any assets. Exchange-traded and cleared OTC derivatives require the posting of initial margin, as well as daily cash settlement of variation margin. The terms and conditions related to the use of the collateral are consistent with industry practice.

Further details on collateral held and pledged as well as the impact of netting arrangements are included in Note 6.A.ii.

The following table shows the OTC derivative financial instruments with a positive fair value split by counterparty credit rating:

As at December 31,	2019			2018		
	Gross positive replacement cost ⁽²⁾	Impact of master netting agreements ⁽³⁾	Net replacement cost ⁽⁴⁾	Gross positive replacement cost ⁽²⁾	Impact of master netting agreements ⁽³⁾	Net replacement cost ⁽⁴⁾
Over-the-counter contracts:						
AA	\$ 439	\$ (210)	\$ 229	\$ 289	\$ (252)	\$ 37
A	1,008	(517)	491	750	(507)	243
BBB	82	(10)	72	46	(9)	37
Total over-the-counter derivatives⁽¹⁾	\$ 1,529	\$ (737)	\$ 792	\$ 1,085	\$ (768)	\$ 317

(1) Exchange-traded derivatives with a positive fair value of \$19 in 2019 (\$27 in 2018) are excluded from the table above, as they are subject to daily margining requirements. Our credit exposure on these derivatives is with the exchanges and clearinghouses.

(2) Used to determine the credit risk exposure if the counterparties were to default. The credit risk exposure is the cost of replacing, at current market rates, all contracts with a positive fair value.

(3) The credit risk associated with derivative assets subject to master netting arrangements is reduced by derivative liabilities due to the same counterparty in the event of default or early termination. Our overall exposure to credit risk reduced through master netting arrangements may change substantially following the reporting date as the exposure is affected by each transaction subject to the arrangement.

(4) Net replacement cost is positive replacement cost less the impact of master netting agreements.

Credit Default Swaps by Underlying Financial Instrument Credit Rating

Credit default swaps ("CDS") are OTC contracts that transfer credit risk related to an underlying referenced financial instrument from one counterparty to another. The purchaser receives protection against the decline in the value of the referenced financial instrument as a result of

specified credit events such as default or bankruptcy. The seller receives a periodic premium in return for payment contingent on a credit event affecting the referenced financial instrument. CDS index contracts are those where the underlying referenced financial instruments are a group of assets. The Company enters into credit derivatives to replicate credit exposure of an underlying reference security and enhance investment returns. The credit risk ratings of the underlying reference securities for single name contracts were established in accordance with the internal rating process described in the Credit Risk Management Governance and Control section.

The following table provides a summary of the credit default swap protection sold by credit rating of the underlying reference security:

As at December 31,	2019		2018	
	Notional amount	Fair value	Notional amount	Fair value
Single name credit default swap contracts:				
AA	\$ 45	\$ 1	\$ 48	\$ 1
A	574	9	611	9
BBB	608	19	674	13
Total single name credit default swap contracts	\$ 1,227	\$ 29	\$ 1,333	\$ 23
Credit default swap index contracts	\$ –	\$ –	\$ 23	\$ –
Total credit default swap contracts sold	\$ 1,227	\$ 29	\$ 1,356	\$ 23

Reinsurance Assets by Credit Rating

The table below presents the distribution of Reinsurance assets by credit rating:

As at December 31,	2019			2018		
	Gross exposure	Collateral	Net exposure	Gross exposure	Collateral	Net exposure
Reinsurance assets by credit rating:						
AA	\$ 2,131	\$ 5	\$ 2,126	\$ 1,442	\$ 6	\$ 1,436
A	1,170	68	1,102	1,760	83	1,677
BBB	200	128	72	203	132	71
BB	1,707	1,663	44	1,677	1,617	60
CCC	181	168	13	252	72	180
Not rated	78	67	11	79	75	4
Total	\$ 5,467	\$ 2,099	\$ 3,368	\$ 5,413	\$ 1,985	\$ 3,428
Less: Negative reinsurance assets	1,443			1,272		
Total Reinsurance assets	\$ 4,024			\$ 4,141		

6.A.vi Impairment of Assets

Management assesses debt and equity securities, mortgages and loans, and other invested assets for objective evidence of impairment at each reporting date. We employ a portfolio monitoring process to identify assets or groups of assets that have objective evidence of impairment, having experienced a loss event or events that have an impact on the estimated future cash flows of the asset or group of assets. There are inherent risks and uncertainties in our evaluation of assets or groups of assets for objective evidence of impairment, including both internal and external factors such as general economic conditions, issuers' financial conditions and prospects for economic recovery, market interest rates, unforeseen events which affect one or more issuers or industry sectors, and portfolio management parameters, including asset mix, interest rate risk, portfolio diversification, duration matching, and greater than expected liquidity needs. All of these factors could impact our evaluation of an asset or group of assets for objective evidence of impairment.

Management exercises considerable judgment in assessing for objective evidence of impairment and, based on its assessment, classifies specific assets as either performing or into one of the following credit quality lists:

"Monitor List" – the timely collection of all contractually specified cash flows is reasonably assured, but changes in issuer-specific facts and circumstances require monitoring. No impairment charge is recorded for unrealized losses on assets related to these debtors.

"Watch List" – the timely collection of all contractually specified cash flows is reasonably assured, but changes in issuer-specific facts and circumstances require heightened monitoring. An asset is moved from the Monitor List to the Watch List when changes in issuer-specific facts and circumstances increase the possibility that a security may experience a loss event on an imminent basis. No impairment charge is recorded for unrealized losses on assets related to these debtors.

"Impaired List" – the timely collection of all contractually specified cash flows is no longer reasonably assured. For these investments that are classified as AFS or amortized cost, an impairment charge is recorded or the asset is sold and a realized loss is recorded as a charge to income. Impairment charges and realized losses are recorded on assets related to these debtors.

Our approach to determining whether there is objective evidence of impairment varies by asset type. However, we have a process to ensure that in all instances where a decision has been made to sell an asset at a loss, the asset is impaired.

Debt Securities

Objective evidence of impairment on debt securities involves an assessment of the issuer's ability to meet current and future contractual interest and principal payments. In determining whether debt securities have objective evidence of impairment, we employ a screening

process. The process identifies securities in an unrealized loss position, with particular attention paid to those securities whose fair value to amortized cost percentages have been less than 80% for an extended period of time. Discrete credit events, such as a ratings downgrade, are also used to identify securities that may have objective evidence of impairment. The securities identified are then evaluated based on issuer-specific facts and circumstances, including an evaluation of the issuer's financial condition and prospects for economic recovery, evidence of difficulty being experienced by the issuer's parent or affiliate, and management's assessment of the outlook for the issuer's industry sector.

Management also assesses previously impaired debt securities whose fair value has recovered to determine whether the recovery is objectively related to an event occurring subsequent to the impairment loss that has an impact on the estimated future cash flows of the asset.

Asset-backed securities are assessed for objective evidence of impairment. Specifically, we periodically update our best estimate of cash flows over the life of the security. In the event that there is an adverse change in the expected cash flows, the asset is impaired. Estimating future cash flows is a quantitative and qualitative process that incorporates information received from third parties, along with assumptions and judgments about the future performance of the underlying collateral. Losses incurred on the respective mortgage-backed securities portfolios are based on loss models using assumptions about key systematic risks, such as unemployment rates and housing prices, and loan-specific information such as delinquency rates and loan-to-value ratios.

Equity Securities and Other Invested Assets

Objective evidence of impairment for equity securities and investments in limited partnerships, segregated funds, and mutual funds involves an assessment of the prospect of recovering the cost of our investment. Instruments in an unrealized loss position are reviewed to determine if objective evidence of impairment exists. Objective evidence of impairment for these instruments includes, but is not limited to, the financial condition and near-term prospects of the issuer, including information about significant changes with adverse effects that have taken place in the technological, market, economic, or legal environment in which the issuer operates, and a significant or prolonged decline in the fair value of the instruments below their cost.

We apply presumptive impairment tests to determine whether there has been a significant or prolonged decline in the fair value of an instrument below its cost, and unless extenuating circumstances exist, the instrument is considered to be impaired.

Mortgages and Loans

Objective evidence of impairment on mortgages and loans involves an assessment of the borrower's ability to meet current and future contractual interest and principal payments. In determining whether objective evidence of impairment exists, we consider a number of factors including, but not limited to, the financial condition of the borrower and, for collateral dependent mortgages and loans, the fair value of the collateral.

Mortgages and loans causing concern are monitored closely and evaluated for objective evidence of impairment. For these mortgages and loans, we review information that is appropriate to the circumstances, including recent operating developments, strategy review, timelines for remediation, financial position of the borrower and, for collateral-dependent mortgages and loans, the value of security as well as occupancy and cash flow considerations.

In addition to specific allowances, circumstances may warrant a collective allowance based on objective evidence of impairment for a group of mortgages and loans. We consider regional economic conditions, developments for various property types, and significant exposure to struggling tenants in determining whether there is objective evidence of impairment for certain collateral dependent mortgages and loans, even though it is not possible to identify specific mortgages and loans that are likely to become impaired on an individual basis.

Management also assesses previously impaired mortgages and loans to determine whether a recovery is objectively related to an event occurring subsequent to the impairment loss that has an impact on the estimated future cash flows of the asset.

Impairment of Fair Value Through Profit or Loss Assets

Since financial assets classified as FVTPL are carried at fair value with changes in fair value recorded to income, any reduction in value of the assets due to impairment is already reflected in income. However, the impairment of assets classified as FVTPL generally impacts the change in insurance contract liabilities due to the impact of asset impairment on estimates of future cash flows.

Impairment of Available-for-Sale Assets

We recognized impairment losses on AFS assets of \$36 for the year ended December 31, 2019 (\$12 during 2018).

We did not reverse any impairment on AFS debt securities during 2019 and 2018.

Past Due and Impaired Mortgages and Loans

The distribution of mortgages and loans past due or impaired is shown in the following tables:

As at December 31, 2019	Gross carrying value			Allowance for losses		
	Mortgages	Loans	Total	Mortgages	Loans	Total
Not past due	\$ 16,148	\$ 31,911	\$ 48,059	\$ –	\$ –	\$ –
Impaired	147	133	280	70	47	117
Total	\$ 16,295	\$ 32,044	\$ 48,339	\$ 70	\$ 47	\$ 117

As at December 31, 2018	Gross carrying value			Allowance for losses		
	Mortgages	Loans	Total	Mortgages	Loans	Total
Not past due	\$ 16,427	\$ 30,332	\$ 46,759	\$ –	\$ –	\$ –
Past due:						
Past due less than 90 days	–	14	14	–	–	–
Impaired	31	93	124	25	50	75
Total	\$ 16,458	\$ 30,439	\$ 46,897	\$ 25	\$ 50	\$ 75

Changes in Allowances for Losses

The changes in the allowances for losses are as follows:

	Mortgages	Loans	Total
Balance, January 1, 2018	\$ 22	\$ 28	\$ 50
Provision for (reversal of) losses	3	19	22
Write-offs, net of recoveries, and other adjustments	(2)	–	(2)
Foreign exchange rate movements	2	3	5
Balance, December 31, 2018	\$ 25	\$ 50	\$ 75
Provision for (reversal of) losses	46	(1)	45
Foreign exchange rate movements	(1)	(2)	(3)
Balance, December 31, 2019	\$ 70	\$ 47	\$ 117

6.B Market Risk

Risk Description

We are exposed to financial and capital market risk, which is defined as the risk that the fair value or future cash flows of an insurance contract or financial instrument will fluctuate because of changes or volatility in market prices. Market risk includes equity, interest rate and spread, real estate and foreign currency risks.

Market Risk Management Governance and Control

We employ a wide range of market risk management practices and controls as outlined below:

- Market risk governance practices are in place, including independent monitoring and review and reporting to senior management and the Risk & Conduct Review Committee.
- Risk appetite limits have been established for equity, interest rate, real estate and foreign currency risks.
- Income and regulatory capital sensitivities are monitored, managed and reported against pre-established risk limits.
- Comprehensive asset-liability management and hedging policies, programs and practices are in place.
- Regulatory solvency requirements include risk-based capital requirements and are monitored regularly.
- Product Design and Pricing Policy requires a detailed risk assessment and pricing provisions for material risks.
- Stress-testing techniques, such as DCAT, are used to measure the effects of large and sustained adverse market movements.
- Insurance contract liabilities are established in accordance with Canadian actuarial standards of practice.
- Internal capital targets are established at an enterprise level to cover all risks and are above minimum regulatory and supervisory levels. Actual capital levels are monitored to ensure they exceed internal targets.

Specific market risks and our risk management strategies are discussed below in further detail.

6.B.i Equity Risk

Equity risk is the potential for financial loss arising from declines or volatility in equity market prices. We are exposed to equity risk from a number of sources. A portion of our exposure to equity risk arises in connection with benefit guarantees on segregated fund contracts and variable annuities. These benefit guarantees may be triggered upon death, maturity, withdrawal or annuitization. The cost of providing for these guarantees is uncertain and will depend upon a number of factors, including general capital market conditions, underlying fund performance, policyholder behaviour and mortality experience, which may result in negative impacts on our net income and capital.

We generate revenue in our asset management businesses and from certain insurance and annuity contracts where fees are levied on account balances that are affected directly by equity market levels. Accordingly, we have further exposure to equity risk as adverse fluctuations in the market value of such assets will result in corresponding adverse impacts on our revenue and net income. In addition, declining and volatile equity markets may have a negative impact on sales and redemptions (surrenders) in these businesses, and this may result in further adverse impacts on our net income and financial position.

We also have direct exposure to equity markets from the investments supporting other general account liabilities, surplus, and employee benefit plans. These exposures fall within our risk-taking philosophy and appetite, and are therefore generally not hedged.

The carrying value of equities by issuer country is shown in the following table:

As at December 31,	2019			2018		
	Fair value through profit or loss	Available-for-sale	Total equities	Fair value through profit or loss	Available-for-sale	Total equities
Canada	\$ 2,813	\$ 22	\$ 2,835	\$ 2,651	\$ 15	\$ 2,666
United States	550	137	687	508	388	896
United Kingdom	132	5	137	121	5	126
Other	979	149	1,128	734	212	946
Total equities	\$ 4,474	\$ 313	\$ 4,787	\$ 4,014	\$ 620	\$ 4,634

6.B.ii Embedded Derivatives Risk

An embedded derivative is contained within a host insurance contract if it includes an identifiable condition to modify the cash flows that are otherwise payable. This section is applicable to those embedded derivatives where we are not required to, and have not measured (either separately or together with the host contract) the embedded derivative at fair value.

A significant market risk exposure from embedded derivatives arises in connection with the benefit guarantees on segregated fund contracts. These benefit guarantees are linked to underlying fund performance and may be triggered upon death, maturity, withdrawal, or annuitization. We have implemented hedging programs to mitigate a portion of this market risk exposure.

We are also exposed to significant interest rate risk from embedded derivatives in certain general account products and segregated fund contracts, which contain explicit or implicit investment guarantees in the form of minimum crediting rates, guaranteed premium rates, settlement options, and benefit guarantees. If investment returns fall below guaranteed levels, we may be required to increase liabilities or capital in respect of these contracts. The guarantees attached to these products may be applicable to both past premiums collected and future premiums not yet received. Segregated fund contracts provide benefit guarantees that are linked to underlying fund performance and may be triggered upon death, maturity, withdrawal, or annuitization. These products are included in our asset-liability management program and the residual interest rate exposure is managed within our risk appetite limits.

We are also exposed to interest rate risk through guaranteed annuitization options included primarily in retirement contracts and pension plans. These embedded options give policyholders the right to convert their investment into a pension on a guaranteed basis, thereby exposing us to declining long-term interest rates as the annuity guarantee rates come into effect. Embedded options on unit-linked pension contracts give policyholders the right to convert their fund at retirement into pensions on a guaranteed basis, thereby exposing us to declining interest rates and increasing equity market returns (increasing the size of the fund which is eligible for the guaranteed conversion basis). Guaranteed annuity options are included in our asset-liability management program and most of the interest rate and equity exposure is mitigated through hedging.

Significant changes or volatility in interest rates or spreads could have a negative impact on sales of certain insurance and annuity products, and adversely impact the expected pattern of redemptions (surrenders) on existing policies. Increases in interest rates or widening spreads may increase the risk that policyholders will surrender their contracts, potentially forcing us to liquidate assets at a loss and accelerate recognition of certain acquisition expenses. While we have established hedging programs in place and our insurance and annuity products often contain surrender mitigation features, these may not be sufficient to fully offset the adverse impact of the underlying losses.

Certain annuity and long-term disability contracts contain embedded derivatives as benefits are linked to the Consumer Price Index; however most of this exposure is hedged through the Company's ongoing asset-liability management program.

6.C Liquidity Risk

Risk Description

Liquidity risk is the possibility that we will not be able to fund all cash outflow commitments and collateral requirements as they fall due. This includes the risk of being forced to sell assets at depressed prices resulting in realized losses on sale. This risk also includes restrictions on our ability to efficiently allocate capital among our subsidiaries due to various market and regulatory constraints on the movement of funds. Our funding obligations arise in connection with the payment of policyholder benefits, expenses, reinsurance settlements, asset purchases, investment commitments, interest on debt, and dividends on common and preferred shares. Sources of available cash flow include general fund premiums and deposits, investment related inflows (such as maturities, principal repayments, investment income and proceeds of asset sales), proceeds generated from financing activities, and dividends and interest payments from subsidiaries. We have various financing transactions and derivative contracts under which we may be required to pledge collateral or to make payments to our counterparties for the decline in market value of specified assets. The amount of collateral or payments required may increase under certain circumstances (such as changes to interest rates, credit spreads, equity markets or foreign exchange rates), which could adversely affect our liquidity.

Liquidity Risk Management Governance and Control

We generally maintain a conservative liquidity position and employ a wide range of liquidity risk management practices and controls, which are described below:

- Liquidity risk governance practices are in place, including independent monitoring and review and reporting to senior management and the Risk & Conduct Review Committee.
- Liquidity is managed in accordance with our Asset Liability Management Policy and operating guidelines.
- Liquidity contingency plans are maintained for the management of liquidity in a liquidity event.
- Stress testing is performed by comparing liquidity coverage risk metrics under a one-month stress scenario to our policy thresholds. These liquidity coverage risk metrics are measured and managed at the enterprise and legal entity levels.
- Stress testing of our collateral is performed by comparing collateral coverage ratios to our policy threshold.
- Cash Management and asset-liability management programs support our ability to maintain our financial position by ensuring that sufficient cash flow and liquid assets are available to cover potential funding requirements. We invest in various types of assets with a view of matching them to our liabilities of various durations.
- Internal capital targets are established at an enterprise level to cover all risks and are above minimum regulatory and supervisory levels. Actual capital levels are monitored to ensure they exceed internal targets.
- We actively manage and monitor our capital and asset levels, and the diversification and credit quality of our investments.
- Various credit facilities for general corporate purposes are maintained.

We are subject to various regulations in the jurisdictions in which we operate. The ability of SLF Inc.'s subsidiaries to pay dividends and transfer funds is regulated in certain jurisdictions and may require local regulatory approvals and the satisfaction of specific conditions in certain circumstances. Through effective cash management and capital planning, SLF Inc. ensures that its subsidiaries, as a whole and on a stand-alone basis, are properly funded and maintain adequate liquidity to meet obligations, both individually and in aggregate.

Based on our historical cash flows and liquidity management processes, we believe that the cash flows from our operating activities will continue to provide sufficient liquidity for us to satisfy debt service obligations and to pay other expenses as they fall due.

7. Insurance Risk Management

7.A Insurance Risk

Risk Description

Insurance risk is the uncertainty of product performance due to actual experience emerging differently than expected in the areas of policyholder behaviour, mortality, morbidity and longevity. In addition, product design and pricing, expense and reinsurance risks impact multiple risk categories, including insurance risk.

Insurance Risk Management Governance and Control

We employ a wide range of insurance risk management practices and controls, as outlined below:

- Insurance risk governance practices are in place, including independent monitoring and review and reporting to senior management and the Risk & Conduct Review Committee.
- Risk appetite limits have been established for policyholder behaviour, mortality and morbidity, and longevity risks.
- Income and regulatory capital sensitivities are monitored, managed and reported against pre-established risk limits.
- Comprehensive Insurance Risk Policy, guidelines and practices are in place.
- The global underwriting manual aligns underwriting practices with our corporate risk management standards and ensures a consistent approach in insurance underwriting.
- Board-approved maximum retention limits are in place. Amounts issued in excess of these limits are reinsured.
- Detailed procedures, including criteria for approval of risks and for claims adjudication are established and monitored for each business segment.
- Underwriting and risk selection standards are established and overseen by the corporate underwriting and claims risk management function.
- Diversification and risk pooling is managed by aggregation of exposures across product lines, geography and distribution channels.
- The Insurance Risk Policy and Investment & Credit Risk Policy establish acceptance criteria and protocols to monitor the level of reinsurance ceded to any single reinsurer or group of reinsurers.
- Reinsurance counterparty risk is monitored, including annual reporting of reinsurance exposure to the Risk & Conduct Review Committee.
- Concentration risk exposure is monitored on group policies in a single location to avoid a catastrophic event occurrence resulting in a significant impact.
- Various limits, restrictions and fee structures are introduced into plan designs in order to establish a more homogeneous policy risk profile and limit potential for anti-selection.
- Regulatory solvency requirements include risk-based capital requirements and are monitored regularly.
- The Product Design and Pricing Policy requires detailed risk assessment and pricing provision for material risks.
- Company specific and industry level experience studies and sources of earnings analysis are monitored and factored into valuation, renewal and new business pricing processes.
- Stress-testing techniques, such as DCAT, are used to measure the effects of large and sustained adverse movements in insurance risk factors. In 2020, the Canadian Institute of Actuaries will replace DCAT with FCT. FCT, similar to DCAT, will continue to act as a key stress-testing technique for the organization. FCT's testing is broader than DCAT and allows for harmonization with the Company's ORSA.
- Insurance contract liabilities are established in accordance with Canadian actuarial standards of practice.
- Internal capital targets are established at an enterprise level to cover all risks and are above minimum regulatory and supervisory levels. Actual capital levels are monitored to ensure they exceed internal targets.

We use reinsurance to limit losses, minimize exposure to significant risks and to provide additional capacity for growth. Our Insurance Risk Policy sets maximum global retention limits and related management standards and practices that are applied to reduce our exposure to large claims. Amounts in excess of the Board-approved maximum retention limits are reinsured. Effective January 1, 2019, we updated our single life or joint-first-to-die basis retention limit to \$40 (\$25 in 2018) in Canada and US\$40 (US\$25 in 2018) outside of Canada. For survivorship life insurance, our maximum global retention limit is \$50 (\$30 in 2018) in Canada and US\$50 (US\$30 in 2018) outside of Canada. In certain markets and jurisdictions, retention levels below the maximum are applied. Reinsurance is utilized for numerous products in most business segments, and placement is done on an automatic basis for defined insurance portfolios and on a facultative basis for individual risks with certain characteristics.

Our reinsurance coverage is well diversified and controls are in place to manage exposure to reinsurance counterparties. Reinsurance exposures are monitored to ensure that no single reinsurer represents an undue level of credit risk. This includes performing periodic due diligence on our reinsurance counterparties as well as internal credit assessments on counterparties with which we have material exposure. While reinsurance arrangements provide for the recovery of claims arising from the liabilities ceded, we retain primary responsibility to the policyholders.

Specific insurance risks and our risk management strategies are discussed below in further detail. The sensitivities provided below reflect the impact of any applicable ceded reinsurance arrangements.

7.A.i Policyholder Behaviour Risk

Risk Description

We can incur losses due to adverse policyholder behaviour relative to the assumptions used in the pricing and valuation of products with regard to lapse of policies or exercise of other embedded policy options.

Uncertainty in policyholder behaviour can arise from several sources including unexpected events in the policyholder's life circumstances, the general level of economic activity (whether higher or lower than expected), changes in the financial and capital markets, changes in pricing and availability of current products, the introduction of new products, changes in underwriting technology and standards, as well as changes in our financial strength or reputation. Uncertainty in future cash flows affected by policyholder behaviour can be further exacerbated by irrational behaviour during times of economic turbulence or at key option exercise points in the life of an insurance contract.

For individual life insurance products where fewer terminations would be financially adverse to us, shareholders' net income and equity would be decreased by about \$265 (\$250 in 2018) if the termination rate assumption were reduced by 10%. For products where more terminations would be financially adverse to us, shareholders' net income and equity would be decreased by about \$195 (\$195 in 2018) if the termination rate assumption were increased by 10%. These sensitivities reflect the impact of any applicable ceded reinsurance arrangements.

Policyholder Behaviour Risk Management Governance and Control

Various types of provisions are built into many of our products to reduce the impact of uncertain policyholder behaviour. These provisions include:

- Surrender charges that adjust the payout to the policyholder by taking into account prevailing market conditions.
- Limits on the amount that policyholders can surrender or borrow.
- Restrictions on the timing of policyholders' ability to exercise certain options.
- Restrictions on both the types of funds Clients can select and the frequency with which they can change funds.
- Policyholder behaviour risk is also mitigated through reinsurance on some insurance contracts.

Internal experience studies are used to monitor, review and update policyholder behaviour assumptions as needed, which could result in updates to policy liabilities.

7.A.ii Mortality and Morbidity Risk

Risk Description

Mortality and morbidity risk is the risk that future experience could be worse than the assumptions used in the pricing and valuation of products. Mortality and morbidity risk can arise in the normal course of business through random fluctuation in realized experience, through catastrophes, or in association with other risk factors such as product development and pricing or model risk. Adverse mortality and morbidity experience could also occur through systemic anti-selection, which could arise due to poor plan design, or underwriting process failure or the development of investor-owned and secondary markets for life insurance policies.

The risk of adverse morbidity experience also increases during economic slowdowns, especially with respect to disability coverage, as well as with increases in high medical treatment costs and growth in utilization of specialty drugs. This introduces the potential for adverse financial volatility in our financial results. External factors could adversely affect our life insurance, health insurance, critical illness, disability, long-term care insurance and annuity businesses. Adverse trends in morbidity experience, such as higher disability incidence, increases in high medical treatment costs and growth in utilization of specialty drugs, introduce the potential for adverse volatility in our financial results.

For life insurance products, a 2% increase in the best estimate assumption would decrease shareholders' net income and equity by about \$35 (\$35 in 2018). This sensitivity reflects the impact of any applicable ceded reinsurance arrangements.

For products where morbidity is a significant assumption, a 5% adverse change in the assumptions would reduce shareholders' net income and equity by about \$205 (\$185 in 2018). This sensitivity reflects the impact of any applicable ceded reinsurance arrangements.

Mortality and Morbidity Risk Management Governance and Control

Detailed uniform underwriting procedures have been established to determine the insurability of applicants and to manage exposure to large claims. These underwriting requirements are regularly scrutinized against industry guidelines and oversight is provided through a corporate underwriting and claim management function.

We do not have a high degree of concentration risk to single individuals or groups due to our well-diversified geographic and business mix. The largest portion of mortality risk within the Company is in North America. Individual and group insurance policies are underwritten prior to initial issue and renewals, based on risk selection, plan design, and rating techniques.

The Insurance Risk Policy approved by the Risk & Conduct Review Committee includes limits on the maximum amount of insurance that may be issued under one policy and the maximum amount that may be retained. These limits vary by geographic region and amounts in excess of limits are reinsured to ensure there is no exposure to unreasonable concentration of risk.

7.A.iii Longevity Risk

Risk Description

Longevity risk is the potential for economic loss, accounting loss or volatility in earnings arising from adverse changes in rates of mortality improvement relative to the assumptions used in the pricing and valuation of products. This risk can manifest itself slowly over time as socioeconomic conditions improve and medical advances continue. It could also manifest itself more quickly, for example, due to medical breakthroughs that significantly extend life expectancy. Longevity risk affects contracts where benefits or costs are based upon the likelihood of survival (for example, annuities, pensions, pure endowments, reinsurance, segregated funds, and specific types of health contracts). Additionally, our longevity risk exposure is increased for certain annuity products such as guaranteed annuity options by an increase in equity market levels.

For annuities products for which lower mortality would be financially adverse to us, a 2% decrease in the mortality assumption would decrease shareholders' net income and equity by about \$135 (\$120 in 2018). These sensitivities reflect the impact of any applicable ceded reinsurance arrangements.

Longevity Risk Management Governance and Control

To improve management of longevity risk, we monitor research in the fields that could result in a change in expected mortality improvement. Stress-testing techniques are used to measure and monitor the impact of extreme mortality improvement on the aggregate portfolio of insurance and annuity products as well as our own pension plans.

7.A.iv Product Design and Pricing Risk

Risk Description

Product design and pricing risk is the risk a product does not perform as expected, causing adverse financial consequences. This risk may arise from deviations in realized experience versus assumptions used in the pricing of products. Risk factors include uncertainty concerning future investment yields, policyholder behaviour, mortality and morbidity experience, sales levels, mix of business, expenses and taxes. Although

some of our products permit us to increase premiums or adjust other charges and credits during the life of the policy or contract, the terms of these policies or contracts may not allow for sufficient adjustments to maintain expected profitability. This could have an adverse effect on our profitability and capital position.

Product Design and Pricing Governance and Control

Our Product Design and Pricing Policy, approved by the Risk & Conduct Review Committee, establishes the framework governing our product design and pricing practices and is designed to align our product offerings with our strategic objectives and risk-taking philosophy. Consistent with this policy, product development, design and pricing processes have been implemented throughout the Company. New products follow a stage-gate process with defined management approvals based on the significance of the initiative, and each initiative is subject to a risk assessment process to identify key risks and risk mitigation requirements, and is reviewed by multiple stakeholders. Additional governance and control procedures are listed below:

- Pricing models, methods, and assumptions are subject to periodic internal peer reviews.
- Experience studies, sources of earnings analysis, and product dashboards are used to monitor actual experience against those assumed in pricing and valuation.
- On experience rated, participating, and adjustable products, emerging experience is reflected through changes in policyholder dividend scales as well as other policy adjustment mechanisms such as premium and benefit levels.
- Limits and restrictions may be introduced into the design of products to mitigate adverse policyholder behaviour or apply upper thresholds on certain benefits.

7.A.v Expense Risk

Risk Description

Expense risk is the risk that future expenses are higher than the assumptions used in the pricing and valuation of products. This risk can arise from general economic conditions, unexpected increases in inflation, slower than anticipated growth, or reduction in productivity leading to increases in unit expenses. Expense risk occurs in products where we cannot or will not pass increased costs onto the Client and will manifest itself in the form of a liability increase or a reduction in expected future profits.

The sensitivity of liabilities for insurance contracts to a 5% increase in unit expenses would result in a decrease in shareholders' net income and equity of about \$170 (\$175 in 2018). These sensitivities reflect the impact of any applicable ceded reinsurance arrangements.

Expenses Risk Management Governance and Control

We closely monitor expenses through an annual budgeting process and ongoing monitoring of any expense gaps between unit expenses assumed in pricing and actual expenses.

7.A.vi Reinsurance Risk

Risk Description

We purchase reinsurance for certain risks underwritten by our various insurance businesses. Reinsurance risk is the risk of financial loss due to adverse developments in reinsurance markets (for example, discontinuance or diminution of reinsurance capacity, or an increase in the cost of reinsurance), insolvency of a reinsurer or inadequate reinsurance coverage.

Changes in reinsurance market conditions, including actions taken by reinsurers to increase rates on existing and new coverage and our ability to obtain appropriate reinsurance, may adversely impact the availability or cost of maintaining existing or securing new reinsurance capacity, with adverse impacts on our business strategies, profitability and financial position. There is an increased possibility of rate increases or renegotiation of legacy reinsurance contracts by our reinsurers, as the global reinsurance industry continues to review and optimize their business models. In addition, changes to the regulatory treatment of reinsurance arrangements could have an adverse impact on our capital position.

Reinsurance Risk Management Governance and Control

We have an Insurance Risk Policy and an Investment & Credit Risk Policy approved by the Risk & Conduct Review Committee, which set acceptance criteria and processes to monitor the level of reinsurance ceded to any single reinsurer. These policies also set minimum criteria for determining which reinsurance companies qualify as suitable reinsurance counterparties having the capability, expertise, governance practices and financial capacity to assume the risks being considered. Additionally, these policies require that all agreements include provisions to allow action to be taken, such as recapture of ceded risk (at a potential cost to the Company), in the event that the reinsurer loses its legal ability to carry on business through insolvency or regulatory action. Periodic due diligence is performed on the reinsurance counterparties with which we do business and internal credit assessments are performed on reinsurance counterparties with which we have material exposure. Reinsurance counterparty credit exposures are monitored closely and reported annually to the Risk & Conduct Review Committee.

New sales of our products can be discontinued or changed to reflect developments in the reinsurance markets. Rates for our in-force reinsurance treaties can be either guaranteed or adjustable for the life of the ceded policy. In order to diversify reinsurance risk, there is generally more than one reinsurer supporting a reinsurance pool.

8. Other Assets

Other assets consist of the following:

As at December 31,	2019	2018
Accounts receivable	\$ 1,294	\$ 1,451
Investment income due and accrued	1,122	1,131
Property and equipment	630	621
Right-of-use assets	770	–
Deferred acquisition costs ⁽¹⁾	139	130
Prepaid expenses	319	309
Premium receivable	662	567
Accrued post-retirement benefit assets (Note 25)	187	184
Other	93	105
Total other assets	\$ 5,216	\$ 4,498

(1) Amortization of deferred acquisition cost charged to income during the year amounted to \$18 in 2019 (\$33 in 2018).

9. Goodwill and Intangible Assets

9.A Goodwill

Changes in the carrying amount of goodwill acquired through business combinations by reportable business segment are as follows:

	Canada	U.S.	Asia	Asset Management	Corporate	Total
Balance, January 1, 2018	\$ 2,573	\$ 1,043	\$ 655	\$ 729	\$ 183	\$ 5,183
Acquisitions	34	7	–	–	–	41
Foreign exchange rate movements	–	88	50	46	4	188
Balance, December 31, 2018	\$ 2,607	\$ 1,138	\$ 705	\$ 775	\$ 187	\$ 5,412
Acquisitions (Note 3)	–	–	–	537	–	537
Foreign exchange rate movements	–	(55)	(29)	(31)	(2)	(117)
Balance, December 31, 2019	\$ 2,607	\$ 1,083	\$ 676	\$ 1,281	\$ 185	\$ 5,832

Goodwill was not impaired in 2019 or 2018. The carrying amounts of goodwill allocated to our CGUs or groups of CGUs are as follows:

As at December 31,	2019	2018
Canada		
Individual	\$ 1,100	\$ 1,100
Group retirement services	453	453
Group benefits	1,054	1,054
U.S. Employee benefits group	1,083	1,138
Asia	676	705
Asset Management		
MFS	494	515
SLC Management ⁽¹⁾	787	260
Corporate		
UK	185	187
Total	\$ 5,832	\$ 5,412

(1) Prior to 2019, SLC Management was referred to as Sun Life Investment Management.

Goodwill acquired in business combinations is allocated to the CGUs or groups of CGUs that are expected to benefit from the synergies of the particular acquisition.

Goodwill is assessed for impairment annually or more frequently if events or circumstances occur that may result in the recoverable amount of a CGU falling below its carrying value. The recoverable amount is the higher of fair value less costs of disposal and value in use. We use fair value less costs of disposal as the recoverable amount.

We use the best evidence of fair value less costs of disposal as the price obtainable for the sale of a CGU, or group of CGUs. Fair value less costs of disposal is initially assessed by looking at recently completed market comparable transactions. In the absence of such comparables, we use either an appraisal methodology (with market assumptions commonly used in the valuation of insurance companies or asset management companies) or a valuation multiples methodology. The fair value measurements are categorized in Level 3 of the fair value hierarchy.

The most recent calculations from 2018 for certain CGUs and groups of CGUs were carried forward and used in the impairment test in the current period as: (i) the recoverable amount for these CGUs and groups of CGUs exceeded the carrying amount by a substantial margin, (ii) the assets and liabilities making up the CGUs and groups of CGUs had not changed significantly, and (iii) the likelihood that the carrying value would exceed the recoverable amount was remote, based on an analysis of events that have occurred and circumstances that have changed. The key drivers impacting the recoverable amount from 2018 are consistent with the key assumptions below.

Under the appraisal methodology, fair value is assessed based on best estimates of future income, expenses, level and cost of capital over the lifetime of the policies and, where appropriate, adjusted for items such as transaction costs. The value ascribed to new business is based on sales anticipated in our business plans, sales projections for the valuation period based on reasonable growth assumptions, and anticipated levels of profitability of that new business. In calculating the value of new business, future sales are projected for 10 to 15 years. In some instances, market multiples are used to approximate the explicit projection of new business.

The discount rates applied reflect the nature of the environment for that CGU. The discount rates used range from 9.0% to 12.5% (after tax). More established CGUs with a stronger brand and competitive market position use discount rates at the low end of the range and CGUs with a weaker competitive position use discount rates at the high end of the range. The capital levels used are aligned with our business objectives.

Under the valuation multiples methodology, fair value is assessed with reference to multiples or ratios of comparable businesses. For life insurers and asset managers, these valuation multiples and ratios may include price-to-earnings or price-to-assets-under-management measures. This assessment takes into consideration a variety of relevant factors and assumptions, including expected growth, risk, and market conditions among others. The price-to-earnings multiples used range from 10.5 to 11.5. The price-to-assets-under-management ratios used range from 0.7% to 2.0%.

Judgment is used in estimating the recoverable amounts of CGUs and the use of different assumptions and estimates could result in material adjustments to the valuation of CGUs and the size of any impairment. Any material change in the key assumptions including those for capital, discount rates, the value of new business, and expenses, as well as cash flow projections used in the determination of recoverable amounts, may result in impairment charges, which could be material.

In considering the sensitivity of the key assumptions above, management determined that there is no reasonably possible change in any of the above that would result in the recoverable amount of any of the CGUs to be less than its carrying amount.

9.B Intangible Assets

Changes in intangible assets are as follows:

	Finite life			Total
	Internally generated software	Other	Indefinite life	
Gross carrying amount				
Balance, January 1, 2018	\$ 579	\$ 1,202	\$ 625	\$ 2,406
Additions	118	(1)	–	117
Acquisitions	–	19	3	22
Foreign exchange rate movements	25	46	45	116
Balance, December 31, 2018	\$ 722	\$ 1,266	\$ 673	\$ 2,661
Additions	151	115	–	266
Acquisitions	–	238	–	238
Foreign exchange rate movements	(16)	(28)	(27)	(71)
Balance, December 31, 2019	\$ 857	\$ 1,591	\$ 646	\$ 3,094
Accumulated amortization and impairment losses				
Balance, January 1, 2018	\$ (338)	\$ (397)	\$ (4)	\$ (739)
Amortization charge for the year	(66)	(53)	–	(119)
Foreign exchange rate movements	(13)	(11)	–	(24)
Balance, December 31, 2018	\$ (417)	\$ (461)	\$ (4)	\$ (882)
Amortization charge for the year	(73)	(64)	–	(137)
Impairment of intangible assets	(13)	–	(2)	(15)
Foreign exchange rate movements	15	8	–	23
Balance, December 31, 2019	\$ (488)	\$ (517)	\$ (6)	\$ (1,011)
Net carrying amount, end of period:				
As at December 31, 2018	\$ 305	\$ 805	\$ 669	\$ 1,779
As at December 31, 2019	\$ 369	\$ 1,074	\$ 640	\$ 2,083

The components of the intangible assets are as follows:

As at December 31,	2019	2018
Finite life intangible assets:		
Distribution, sales potential of field force	\$ 339	\$ 366
Client relationships and asset administration contracts	735	439
Internally generated software	369	305
Total finite life intangible assets	1,443	1,110
Indefinite life intangible assets:		
Fund management contracts ⁽¹⁾	640	669
Total indefinite life intangible assets	640	669
Total intangible assets	\$ 2,083	\$ 1,779

(1) Fund management contracts are attributable to Asset Management, where its competitive position in, and the stability of, its markets support their classification as indefinite life intangible assets.

10. Insurance Contract Liabilities and Investment Contract Liabilities

10.A Insurance Contract Liabilities

10.A.i Description of Business

The majority of the products sold by the Company are insurance contracts. These contracts include all forms of life, health and critical illness insurance sold to individuals and groups, life contingent annuities, accumulation annuities, and segregated fund products with guarantees.

10.A.ii Methods and Assumptions

General

The liabilities for insurance contracts represent the estimated amounts which, together with estimated future premiums and net investment income, will provide for outstanding claims, estimated future benefits, policyholders' dividends, taxes (other than income taxes), and expenses on in-force insurance contracts.

In determining our liabilities for insurance contracts, assumptions must be made about mortality and morbidity rates, lapse and other policyholder behaviour, interest rates, equity market performance, asset default, inflation, expenses, and other factors over the life of our products. Most of these assumptions relate to events that are anticipated to occur many years in the future. Assumptions require significant judgment and regular review and, where appropriate, revision.

We use best estimate assumptions for expected future experience and apply margins for adverse deviations to provide for uncertainty in the choice of the best estimate assumptions. The amount of insurance contract liabilities related to the application of margins for adverse deviations to best estimate assumptions is called a provision for adverse deviations.

Best Estimate Assumptions

Best estimate assumptions are intended to be current, neutral estimates of the expected outcome as guided by Canadian actuarial standards of practice. The choice of best estimate assumptions takes into account current circumstances, past experience data (Company and/or industry), the relationship of past to expected future experience, anti-selection, the relationship among assumptions, and other relevant factors. For assumptions on economic matters, the assets supporting the liabilities and the expected policy for asset-liability management are relevant factors.

Margins for Adverse Deviations

The appropriate level of margin for adverse deviations on an assumption is guided by Canadian actuarial standards of practice. For most assumptions, the standard range of margins for adverse deviations is 5% to 20% of the best estimate assumption, and the actuary chooses from within that range based on a number of considerations related to the uncertainty in the determination of the best estimate assumption. The level of uncertainty, and hence the margin chosen, will vary by assumption and by line of business and other factors. Considerations that would tend to indicate a choice of margin at the high end of the range include:

- The statistical credibility of the Company's experience is too low to be the primary source of data for choosing the best estimate assumption
- Future experience is difficult to estimate
- The cohort of risks lacks homogeneity
- Operational risks adversely impact the ability to estimate the best estimate assumption
- Past experience may not be representative of future experience and the experience may deteriorate

Provisions for adverse deviations in future interest rates are included by testing a number of scenarios of future interest rates, some of which are prescribed by Canadian actuarial standards of practice, and determining the liability based on the range of possible outcomes. A scenario of future interest rates includes, for each forecast period between the statement of financial position date and the last liability cash flow, interest rates for risk-free assets, premiums for asset default, rates of inflation, and an investment strategy consistent with the Company's investment policy. The starting point for all future interest rate scenarios is consistent with the current market environment. If few scenarios are tested, the liability would be at least as great as the largest of the outcomes. If many scenarios are tested, the liability would be within a range defined by the average of the outcomes that are above the 60th percentile of the range of outcomes and the corresponding average for the 80th percentile.

Provisions for adverse deviations in future equity returns are included by scenario testing or by applying margins for adverse deviations. In blocks of business where the valuation of liabilities uses scenario testing of future equity returns, the liability would be within a range defined by the average of the outcomes that are above the 60th percentile of the range of outcomes and the corresponding average for the 80th percentile. In blocks of business where the valuation of liabilities does not use scenario testing of future equity returns, the margin for adverse deviations on common share dividends is between 5% and 20%, and the margin for adverse deviations on capital gains would be 20% plus an assumption that those assets reduce in value by 20% to 50% at the time when the reduction is most adverse. A 30% reduction is appropriate for a diversified portfolio of North American common shares and, for other portfolios, the appropriate reduction depends on the volatility of the portfolio relative to a diversified portfolio of North American common shares.

In choosing margins, we ensure that, when taken one at a time, each margin is reasonable with respect to the underlying best estimate assumption and the extent of uncertainty present in making that assumption, and also that, in aggregate, the cumulative impact of the margins for adverse deviations is reasonable with respect to the total amount of our insurance contract liabilities. Our margins are generally stable over time and are generally only revised to reflect changes in the level of uncertainty in the best estimate assumptions. Our margins tend to be at the high end of the range for expenses and in the mid-range or higher for other assumptions. When considering the aggregate impact of margins, the actuary assesses the consistency of margins for each assumption across each block of business to ensure there is no double counting or omission and to avoid choosing margins that might be mutually exclusive. In particular, the actuary chooses similar margins for blocks of business with similar characteristics, and also chooses margins that are consistent with other assumptions, including assumptions about economic factors. The actuary is guided by Canadian actuarial standards of practice in making these professional judgments about the reasonableness of margins for adverse deviations.

The best estimate assumptions and margins for adverse deviations are reviewed at least annually and revisions are made when appropriate. The choice of assumptions underlying the valuation of insurance contract liabilities is subject to external actuarial peer review.

Mortality

Mortality refers to the rates at which death occurs for defined groups of people. Life insurance mortality assumptions are generally based on the past five to ten years of experience. Our experience is combined with industry experience where our own experience is insufficient to be statistically valid. Assumed mortality rates for life insurance and annuity contracts include assumptions about future mortality improvement based on recent trends in population mortality and our outlook for future trends.

Morbidity

Morbidity refers to both the rates of accident or sickness and the rates of recovery therefrom. Most of our disability insurance is marketed on a group basis. We offer critical illness policies on an individual basis in Canada and Asia, long-term care on an individual basis in Canada, and medical stop-loss insurance is offered on a group basis in the U.S. In Canada, group morbidity assumptions are based on our five-year average experience, modified to reflect any emerging trend in recovery rates. For long-term care and critical illness insurance, assumptions are developed in collaboration with our reinsurers and are largely based on their experience. In the U.S., our experience is used for both medical stop-loss and disability assumptions, with some consideration of industry experience.

Lapse and Other Policyholder Behaviour

Lapse

Policyholders may allow their policies to lapse prior to the end of the contractual coverage period by choosing not to continue to pay premiums or by surrendering their policy for the cash surrender value. Assumptions for lapse experience on life insurance are generally based on our five-year average experience. Lapse rates vary by plan, age at issue, method of premium payment, and policy duration.

Premium Payment Patterns

For universal life contracts, it is necessary to set assumptions about premium payment patterns. Studies prepared by industry or the actuarial profession are used for products where our experience is insufficient to be statistically valid. Premium payment patterns usually vary by plan, age at issue, method of premium payment, and policy duration.

Expense

Future policy-related expenses include the costs of premium collection, claims adjudication and processing, actuarial calculations, preparation and mailing of policy statements, and related indirect expenses and overhead. Expense assumptions are mainly based on our recent experience using an internal expense allocation methodology. Inflationary increases assumed in future expenses are consistent with the future interest rates used in scenario testing.

Investment Returns

Interest Rates

We generally maintain distinct asset portfolios for each major line of business. In the valuation of insurance contract liabilities, the future cash flows from insurance contracts and the assets that support them are projected under a number of interest rate scenarios, some of which are prescribed by Canadian actuarial standards of practice. Reinvestments and disinvestments take place according to the specifications of each scenario, and the liability is set based on the range of possible outcomes.

Non-Fixed Income Rates of Return

We are exposed to equity markets through our segregated fund products (including variable annuities) that provide guarantees linked to underlying fund performance and through insurance products where the insurance contract liabilities are supported by non-fixed income assets.

For segregated fund products (including variable annuities), we have implemented hedging programs involving the use of derivative instruments to mitigate a large portion of the equity market risk associated with the guarantees. The cost of these hedging programs is reflected in the liabilities. The equity market risk associated with anticipated future fee income is not hedged.

The majority of non-fixed income assets that are designated as FVTPL support our participating and universal life products where investment returns are passed through to policyholders through routine changes in the amount of dividends declared or in the rate of interest credited. In these cases, changes in non-fixed income asset values are largely offset by changes in insurance contract liabilities.

Asset Default

As required by Canadian actuarial standards of practice, insurance contract liabilities include a provision for possible future default of the assets supporting those liabilities. The amount of the provision for asset default included in the insurance contract liabilities is based on possible reductions in future investment yield that vary by factors such as type of asset, asset credit quality (rating), duration, and country of origin. The asset default assumptions are comprised of a best estimate plus a margin for adverse deviations, and are intended to provide for loss of both principal and income. Best estimate asset default assumptions by asset category and geography are derived from long-term studies of industry experience and the Company's experience. Margins for adverse deviation are chosen from the standard range (of 25% to 100%) as recommended by Canadian actuarial standards of practice based on the amount of uncertainty in the choice of best estimate assumption. The credit quality of an asset is based on external ratings if available (public bonds) and internal ratings if not (mortgages and loans). Any assets without ratings are treated as if they are rated below investment grade.

In contrast to asset impairment provisions and changes in FVTPL assets arising from impairments, both of which arise from known credit events, the asset default provision in the insurance contract liabilities covers losses related to possible future (unknown) credit events. Canadian actuarial standards of practice require the asset default provision to be determined taking into account known impairments that are recognized elsewhere on the statement of financial position. The asset default provision included in the insurance contract liabilities is reassessed each reporting period in light of impairments, changes in asset quality ratings, and other events that occurred during the period.

10.A.iii Insurance Contract Liabilities

Insurance contract liabilities consist of the following:

As at December 31, 2019	Canada	U.S.	Asia	Corporate ⁽¹⁾	Total
Individual participating life	\$ 23,526	\$ 5,611	\$ 8,497	\$ 987	\$ 38,621
Individual non-participating life and health	13,527	13,832	12,188	386	39,933
Group life and health	10,493	5,541	39	14	16,087
Individual annuities	9,529	24	(17)	5,335	14,871
Group annuities	14,276	7	99	–	14,382
Insurance contract liabilities before other policy liabilities	71,351	25,015	20,806	6,722	123,894
Add: Other policy liabilities ⁽²⁾	2,959	1,724	2,401	206	7,290
Total insurance contract liabilities	\$ 74,310	\$ 26,739	\$ 23,207	\$ 6,928	\$ 131,184

(1) Primarily business from the UK and run-off reinsurance operations. Includes UK business of \$893 for Individual participating life, \$238 for Individual non-participating life and health, \$5,107 for Individual annuities, and \$156 for Other policy liabilities.

(2) Consists of amounts on deposit, policy benefits payable, provisions for unreported claims, provisions for policyholder dividends, and provisions for experience rating refunds.

As at December 31, 2018	Canada	U.S.	Asia	Corporate ⁽¹⁾	Total
Individual participating life	\$ 21,095	\$ 5,785	\$ 6,651	\$ 1,076	\$ 34,607
Individual non-participating life and health	11,435	13,239	12,463	391	37,528
Group life and health	9,591	5,674	32	–	15,297
Individual annuities	9,267	25	(44)	5,608	14,856
Group annuities	12,461	6	147	–	12,614
Insurance contract liabilities before other policy liabilities	63,849	24,729	19,249	7,075	114,902
Add: Other policy liabilities ⁽²⁾	3,049	1,457	2,276	239	7,021
Total insurance contract liabilities	\$ 66,898	\$ 26,186	\$ 21,525	\$ 7,314	\$ 121,923

(1) Primarily business from the UK and run-off reinsurance operations. Includes UK business of \$980 for Individual participating life, \$240 for Individual non-participating life and health, \$5,214 for Individual annuities, and \$170 for Other policy liabilities.

(2) Consists of amounts on deposit, policy benefits payable, provisions for unreported claims, provisions for policyholder dividends, and provisions for experience rating refunds.

10.A.iv Changes in Insurance Contract Liabilities and Reinsurance Assets

Changes in Insurance contract liabilities and Reinsurance assets are as follows:

For the years ended December 31,	2019			2018		
	Insurance contract liabilities	Reinsurance assets	Net	Insurance contract liabilities	Reinsurance assets	Net
Balances, before Other policy liabilities and assets as at January 1,	\$ 114,902	\$ 3,653	\$ 111,249	\$ 111,091	\$ 3,503	\$ 107,588
Change in balances on in-force policies	7,632	268	7,364	(3,094)	(129)	(2,965)
Balances arising from new policies	4,098	136	3,962	3,780	128	3,652
Method and assumption changes	(363)	(376)	13	(374)	(96)	(278)
Increase (decrease) in Insurance contract liabilities and Reinsurance assets	11,367	28	11,339	312	(97)	409
Other ⁽¹⁾	(123)	(123)	–	–	–	–
Foreign exchange rate movements	(2,252)	(163)	(2,089)	3,499	247	3,252
Balances before Other policy liabilities and assets	123,894	3,395	120,499	114,902	3,653	111,249
Other policy liabilities and assets	7,290	629	6,661	7,021	488	6,533
Total Insurance contract liabilities and Reinsurance assets, December 31	\$ 131,184	\$ 4,024	\$ 127,160	\$ 121,923	\$ 4,141	\$ 117,782

(1) Termination of reinsurance contracts.

10.A.v Impact of Method and Assumption Changes

Impacts of method and assumption changes on Insurance contract liabilities, net of Reinsurance assets, are as follows:

For the year ended December 31, 2019	Net increase (decrease) before income taxes	Description
Mortality / Morbidity	\$ (347)	Updates to reflect mortality/morbidity experience in all jurisdictions. The largest items were favourable mortality impacts in the UK in Corporate and in Group Retirement Services in Canada.
Lapse and other policyholder behaviour	102	Updates to lapse and policyholder behaviour in all jurisdictions. The largest item was an unfavourable lapse update in International in Asia.
Expenses	6	Updates to reflect expense experience in all jurisdictions.
Investment returns	6	Updates to various investment-related assumptions across the Company, partially offset by updates to promulgated ultimate reinvestment rates.
Model enhancements and other	246	Various enhancements and methodology changes across all jurisdictions. The largest item was an unfavourable strengthening of reinsurance provisions in In-force Management in the U.S., partially offset by a favourable change to participating accounts in the UK in Corporate and the Philippines in Asia.
Total impact of method and assumption changes	\$ 13	

For the year ended December 31, 2018	Net increase (decrease) before income taxes	Description
Mortality / Morbidity	\$ (337)	Updates to reflect mortality/morbidity experience in all jurisdictions. The largest items were favourable mortality in International in Asia, Group Retirement Services in Canada and the UK in Corporate.
Lapse and other policyholder behaviour	563	Updates to lapse and other policyholder behaviour in all jurisdictions. The largest items, which all had unfavourable impacts, were updated lapse assumptions in the U.S. and International in Asia.
Expenses	6	Updates to reflect expense experience in all jurisdictions including updates to Canada participating life insurance accounts.
Investment returns	(331)	Updates to various investment-related assumptions across the Company including updates to Canada participating life insurance accounts.
Model enhancements and other	(179)	Various enhancements and methodology changes across all jurisdictions. The largest items were a favourable change to the participating provisions for adverse deviation in Canada and the U.S., partially offset by a change in reinsurance provisions in the U.S.
Total impact of method and assumption changes	\$ (278)	

10.B Investment Contract Liabilities

10.B.i Description of Business

The following are the types of investment contracts in-force:

- Term certain payout annuities in Canada
- Guaranteed Investment Contracts in Canada
- Unit-linked products issued in the UK and Hong Kong
- Non-unit-linked pensions contracts issued in the UK and Hong Kong

10.B.ii Method and Assumption Changes

Investment Contracts with Discretionary Participation Features

Investment contracts with DPF are measured using the same approach as insurance contracts.

Investment Contracts without Discretionary Participation Features

Investment contracts without DPF are measured at FVTPL if by doing so, a potential accounting mismatch is eliminated or significantly reduced or if the contract is managed on a fair value basis. Other investment contracts without DPF are measured at amortized cost.

The fair value liability is measured through the use of prospective discounted cash-flow techniques. For unit-linked contracts, the fair value liability is equal to the current unit fund value, plus additional non-unit liability amounts on a fair value basis if required. For non-unit-linked contracts, the fair value liability is equal to the present value of cash flows.

Amortized cost is measured at the date of initial recognition as the fair value of consideration received, less the net effect of principal payments such as transaction costs and front-end fees. At each reporting date, the amortized cost liability is measured as the present value of future cash flows discounted at the effective interest rate where the effective interest rate is the rate that equates the discounted cash flows to the liability at the date of initial recognition.

10.B.iii Investment Contract Liabilities

Investment contract liabilities consist of the following:

As at December 31, 2019	Canada	Asia	Corporate	Total
Individual participating life	\$ –	\$ –	\$ 5	\$ 5
Individual non-participating life and health	–	258	2	260
Individual annuities	2,612	–	39	2,651
Group annuities	–	200	–	200
Total investment contract liabilities	\$ 2,612	\$ 458	\$ 46	\$ 3,116

For the year ended December 31, 2019, Investment contract liabilities of \$3,116 are comprised of investment contracts with DPF of \$502, investment contracts without DPF measured at amortized cost of \$2,612, and for investment contracts without DPF measured at fair value of \$2.

As at December 31, 2018	Canada	Asia	Corporate	Total
Individual participating life	\$ –	\$ –	\$ 6	\$ 6
Individual non-participating life and health	–	254	3	257
Individual annuities	2,646	–	43	2,689
Group annuities	–	212	–	212
Total investment contract liabilities	\$ 2,646	\$ 466	\$ 52	\$ 3,164

For the year ended December 31, 2018, Investment contract liabilities of \$3,164 are comprised of investment contracts with DPF of \$515, investment contracts without DPF measured at amortized cost of \$2,646, and investment contracts without DPF measured at fair value of \$3.

10.B.iv Changes in Investment Contract Liabilities

Changes in investment contract liabilities without DPF are as follows:

For the years ended December 31,	2019		2018	
	Measured at fair value	Measured at amortized cost	Measured at fair value	Measured at amortized cost
Balance as at January 1	\$ 3	\$ 2,646	\$ 3	\$ 2,517
Deposits	–	360	–	483
Interest	–	57	–	53
Withdrawals	–	(464)	–	(420)
Fees	–	(6)	–	(8)
Other	–	20	–	21
Foreign exchange rate movements	(1)	(1)	–	–
Balance as at December 31	\$ 2	\$ 2,612	\$ 3	\$ 2,646

Changes in investment contract liabilities with DPF are as follows:

For the years ended December 31,	2019	2018
Balance as at January 1	\$ 515	\$ 562
Change in liabilities on in-force	2	(84)
Changes in assumptions or methodology	6	–
Foreign exchange rate movements	(21)	37
Balance as at December 31	\$ 502	\$ 515

10.C Gross Claims and Benefits Paid

Gross claims and benefits paid consist of the following:

For the years ended December 31,	2019	2018
Maturities and surrenders	\$ 2,956	\$ 2,609
Annuity payments	1,909	1,876
Death and disability benefits	4,246	3,948
Health benefits	7,222	6,421
Policyholder dividends and interest on claims and deposits	1,088	1,132
Total gross claims and benefits paid	\$ 17,421	\$ 15,986

10.D Total Assets Supporting Liabilities and Equity

The following tables show the total assets supporting liabilities for the product lines shown (including insurance contract and investment contract liabilities) and assets supporting equity and other:

As at December 31, 2019	Debt securities	Equity securities	Mortgages and loans	Investment properties	Other	Total
Individual participating life	\$ 22,533	\$ 2,899	\$ 8,372	\$ 4,941	\$ 4,754	\$ 43,499
Individual non-participating life and health	21,301	1,418	14,145	1,790	9,353	48,007
Group life and health	6,858	72	9,301	–	2,897	19,128
Individual annuities	11,711	48	6,065	–	793	18,617
Group annuities	7,323	37	7,261	–	697	15,318
Equity and other	11,880	313	3,078	575	19,814	35,660
Total assets	\$ 81,606	\$ 4,787	\$ 48,222	\$ 7,306	\$ 38,308	\$ 180,229

As at December 31, 2018	Debt securities	Equity securities	Mortgages and loans	Investment properties	Other	Total
Individual participating life	\$ 19,624	\$ 2,557	\$ 7,978	\$ 4,736	\$ 4,397	\$ 39,292
Individual non-participating life and health	18,720	1,303	14,398	1,638	9,058	45,117
Group life and health	6,271	70	9,217	–	2,882	18,440
Individual annuities	11,918	49	5,769	–	959	18,695
Group annuities	6,448	35	6,298	–	822	13,603
Equity and other	11,462	620	3,162	783	17,591	33,618
Total assets	\$ 74,443	\$ 4,634	\$ 46,822	\$ 7,157	\$ 35,709	\$ 168,765

10.E Role of the Appointed Actuary

The Appointed Actuary is appointed by the Board and is responsible for ensuring that the assumptions and methods used in the valuation of policy liabilities and reinsurance recoverables are in accordance with accepted actuarial practice in Canada, applicable legislation, and associated regulations or directives.

The Appointed Actuary is required to provide an opinion regarding the appropriateness of the policy liabilities, net of reinsurance recoverables, at the statement dates to meet all policy obligations of the Company. Examination of supporting data for accuracy and completeness and analysis of our assets for their ability to support the amount of policy liabilities, net of reinsurance recoverables, are important elements of the work required to form this opinion.

The Appointed Actuary is required each year to investigate the financial condition of the Company and prepare a report for the Board. The 2019 analysis tested our capital adequacy until December 31, 2023, under various adverse economic and business conditions. The Appointed Actuary reviews the calculation of our Life Insurance Capital Adequacy Test (“LICAT”) Ratios.

11. Reinsurance

Reinsurance is used primarily to limit exposure to large losses. We have a retention policy that requires that such arrangements be placed with well-established, highly-rated reinsurers. Coverage is well-diversified and controls are in place to manage exposure to reinsurance counterparties. While reinsurance arrangements provide for the recovery of claims arising from the liabilities ceded, we retain primary responsibility to the policyholders.

11.A Reinsurance Assets

Reinsurance assets are measured using the amounts and assumptions associated with the underlying insurance contracts and in accordance with the terms of each reinsurance contract. Reinsurance assets are comprised of the following:

As at December 31, 2019	Canada	U.S.	Asia	Corporate ⁽¹⁾	Total
Individual participating life	\$ 35	\$ 10	\$ 322	\$ –	\$ 367
Individual non-participating life and health	(377)	913	48	20	604
Group life and health	384	1,881	2	–	2,267
Individual annuities	–	–	–	26	26
Group annuities	131	–	–	–	131
Reinsurance assets before other policy assets	173	2,804	372	46	3,395
Add: Other policy assets ⁽²⁾	73	456	57	43	629
Total Reinsurance assets	\$ 246	\$ 3,260	\$ 429	\$ 89	\$ 4,024

(1) Primarily business from the UK and run-off reinsurance operations. Includes UK business of \$20 for Individual non-participating life and health, and \$26 for Individual annuities.

(2) Consists of amounts on deposit, policy benefits payable, provisions for unreported claims, provisions for policyholder dividends, and provisions for experience rating refunds.

As at December 31, 2018	Canada	U.S.	Asia	Corporate ⁽¹⁾	Total
Individual participating life	\$ 20	\$ 10	\$ 180	\$ –	\$ 210
Individual non-participating life and health	(205)	1,076	36	21	928
Group life and health	358	1,848	2	–	2,208
Individual annuities	–	–	–	186	186
Group annuities	121	–	–	–	121
Reinsurance assets before other policy assets	294	2,934	218	207	3,653
Add: Other policy assets ⁽²⁾	80	307	42	59	488
Total Reinsurance assets	\$ 374	\$ 3,241	\$ 260	\$ 266	\$ 4,141

(1) Primarily business from the UK and run-off reinsurance operations. Includes UK business of \$21 for Individual non-participating life and health, and \$47 for Individual annuities.

(2) Consists of amounts on deposit, policy benefits payable, provisions for unreported claims, provisions for policyholder dividends, and provisions for experience rating refunds.

There was no impairment of Reinsurance assets in 2019 or 2018. Changes in Reinsurance assets are included in Note 10.A.iv.

11.B Reinsurance (Expenses) Recoveries

Reinsurance (expenses) recoveries are comprised of the following:

For the years ended December 31,	2019	2018
Recovered claims and benefits	\$ 1,955	\$ 1,839
Commissions	70	74
Reserve adjustments	26	25
Operating expenses and other	80	83
Reinsurance (expenses) recoveries	\$ 2,131	\$ 2,021

11.C Reinsurance Gains or Losses

We did not enter into reinsurance arrangements that resulted in profits on inception in 2019 or 2018.

12. Other Liabilities

12.A Composition of Other Liabilities

Other liabilities consist of the following:

As at December 31,	2019	2018
Accounts payable	\$ 1,903	\$ 2,045
Bank overdrafts and cash pooling	30	104
Repurchase agreements (Note 5)	1,850	1,824
Accrued expenses and taxes	3,251	3,137
Borrowed funds ⁽¹⁾	320	188
Senior financing ⁽²⁾	1,967	2,066
Accrued post-retirement benefit liability (Note 25)	675	651
Secured borrowings from mortgage securitization (Note 5)	1,715	1,453
Lease liabilities	902	–
Put option liability (Note 5)	956	–
Deferred payments liability	438	–
Other	930	685
Total other liabilities	\$ 14,937	\$ 12,153

(1) The change in Borrowed funds relates to net cash flow changes of \$132 in 2019 (\$40 in 2018) and foreign exchange rate movements of \$nil in 2019 (\$1 in 2018).

(2) The change in Senior financing relates to foreign exchange rate movements of \$(99) in 2019 (\$161 in 2018).

12.B Borrowed Funds

Borrowed funds include the following:

As at December 31,	Currency of borrowing	Maturity	2019	2018
Encumbrances on real estate	Cdn. dollars	Current – 2033	\$ 320	\$ 177
Encumbrances on real estate	U.S. dollars	Current – 2020	–	11
Total borrowed funds			\$ 320	\$ 188

Interest expense for the borrowed funds was \$13 and \$10 for 2019 and 2018, respectively. The aggregate maturities of borrowed funds are included in Note 6.

12.C Senior Financing

On November 8, 2007, a structured entity consolidated by us issued a US\$1,000 variable principal floating rate certificate (the “Certificate”) to a financial institution (the “Lender”). At the same time, Sun Life Assurance Company of Canada-U.S. Operations Holdings, Inc. (“U.S. Holdings”), a subsidiary of SLF Inc., entered into an agreement with the Lender, pursuant to which U.S. Holdings will bear the ultimate obligation to repay the outstanding principal amount of the Certificate and be obligated to make quarterly interest payments at three-month LIBOR plus a fixed spread. SLF Inc. has fully guaranteed the obligation of U.S. Holdings. The structured entity issued additional certificates after the initial issuance, totaling to US\$515, none of which were issued during 2019 and 2018. Total collateral posted per the financing agreement was US\$nil as at December 31, 2019 and 2018.

The maximum capacity of this agreement is US\$2,500. The agreement expires on November 8, 2037 and the maturity date may be extended annually for additional one-year periods upon the mutual agreement of the parties, provided such date is not beyond November 8, 2067. The agreement can be cancelled or unwound at the option of U.S. Holdings in whole or in part from time to time, or in whole under certain events.

For the year ended December 31, 2019, we recorded \$64 of interest expense relating to this obligation (\$57 in 2018). The fair value of the obligation is \$1,874 (\$1,879 in 2018). The fair value is determined by discounting the expected future cash flows using a current market interest rate adjusted by SLF Inc.’s credit spread and is categorized in Level 3 of the fair value hierarchy.

13. Senior Debentures and Innovative Capital Instruments

13.A Senior Debentures⁽¹⁾

The following obligations are included in Senior debentures as at December 31:

	Interest rate	Earliest par call or redemption date	Maturity	2019	2018
SLF Inc. senior debentures:					
Series D issued June 30, 2009 ⁽²⁾	5.70%	n/a	2019	\$ –	\$ 300
Series E issued August 23, 2011 ⁽²⁾	4.57%	n/a	2021	300	299
Sun Life Assurance senior debentures: ⁽³⁾					
Issued to Sun Life Capital Trust (“SLCT I”)					
Series B issued June 25, 2002	7.09%	June 30, 2032 ⁽⁴⁾	2052	200	200
Issued to Sun Life Capital Trust II (“SLCT II”)					
Series C issued November 20, 2009 ⁽⁵⁾	6.06%	December 31, 2019	2108	–	500
Total senior debentures				\$ 500	\$ 1,299
Fair value				\$ 585	\$ 1,390

(1) All senior debentures are unsecured.

(2) Redeemable in whole or in part at any time prior to maturity at a price equal to the greater of par and a price based on the yield of a corresponding Government of Canada bond plus 0.575% for the Series D debentures and 0.53% for the Series E debentures. On July 2, 2019, SLF Inc.’s Series D debentures matured and SLF Inc. repaid all of the outstanding \$300 principal amount of such debentures together with all accrued and unpaid interest.

(3) Redemption is subject to regulatory approval.

(4) Redeemable in whole or in part on any interest payment date or in whole upon the occurrence of a Regulatory Event or Tax Event, as described in the debenture. Prior to June 30, 2032, the redemption price is the greater of par and a price based on the yield of a corresponding Government of Canada bond plus 0.32%; from June 30, 2032, the redemption price is par.

(5) Redeemed on December 31, 2019.

Fair value is determined based on quoted market prices for identical or similar instruments. When quoted market prices are not available, fair value is determined from observable market data by dealers that are typically the market makers. The fair value is categorized in Level 2 of the fair value hierarchy.

Interest expense for senior debentures was \$67 and \$76 for 2019 and 2018, respectively.

The senior debentures issued by SLF Inc. are direct senior unsecured obligations and rank equally with other unsecured and unsubordinated indebtedness of SLF Inc.

13.B Innovative Capital Instruments

Innovative capital instruments consist of Sun Life Exchangeable Capital Securities (“SLEECs”), which were issued by SLCT I and SLCT II (together “SL Capital Trusts”), established as trusts under the laws of Ontario. SLCT I issued Sun Life Exchangeable Capital Securities – Series B (“SLEECs B”), which are units representing an undivided beneficial ownership interest in the assets of that trust. SLEECs B are non-voting except in certain limited circumstances. Holders of the SLEECs B are eligible to receive semi-annual non-cumulative fixed cash distributions.

SLCT II issued Sun Life Exchangeable Capital Securities – Series 2009-1 (“SLEECs 2009-1”), which were subordinated unsecured debt obligations. Holders of SLEECs 2009-1 were eligible to receive semi-annual interest payments. The SLEECs 2009-1 were redeemed on December 31, 2019.

The proceeds of the issuances of SLEECs B and SLEECs 2009-1 were used by the SL Capital Trusts to purchase senior debentures of Sun Life Assurance. The SL Capital Trusts are not consolidated by us. As a result, the innovative capital instruments are not reported on our Consolidated Financial Statements. However, the senior debentures issued by Sun Life Assurance to the SL Capital Trusts are reported on our Consolidated Financial Statements.

The SLEECs are structured to achieve Tier 1 regulatory capital treatment for SLF Inc. and Sun Life Assurance and, as such, have features of equity capital. No interest payments or distributions will be paid in cash by the SL Capital Trusts on the SLEECs if Sun Life Assurance fails to declare regular dividends (i) on its Class B Non-Cumulative Preferred Shares Series A, or (ii) on its public preferred shares, if any are outstanding (each, a “Missed Dividend Event”). In the case of the SLEECs B, if a Missed Dividend Event occurs, the net distributable funds of SLCT I will be distributed to Sun Life Assurance as the holder of Special Trust Securities of that trust.

If SLCT I fails to pay in cash the semi-annual interest payments or distributions on the SLEECs B in full for any reason other than a Missed Dividend Event, then, for a specified period of time, Sun Life Assurance will not declare dividends of any kind on any of its public preferred shares, and if no such public preferred shares are outstanding, SLF Inc. will not declare dividends of any kind on any of its preferred shares or common shares.

Each SLEECs B unit will be automatically exchanged for 40 non-cumulative perpetual preferred shares of Sun Life Assurance if any one of the following events occurs: (i) proceedings are commenced or an order is made for the winding-up of Sun Life Assurance; (ii) OSFI takes control of Sun Life Assurance or its assets; (iii) Sun Life Assurance’s capital ratios fall below applicable thresholds; or (iv) OSFI directs Sun Life Assurance to increase its capital or provide additional liquidity and Sun Life Assurance either fails to comply with such direction or elects to have the SLEECs B automatically exchanged (“Automatic Exchange Event”). Upon an Automatic Exchange Event, former holders of the SLEECs B will cease to have any claim or entitlement to distributions, interest or principal against the issuing SL Capital Trusts and will rank as preferred shareholders of Sun Life Assurance in a liquidation of Sun Life Assurance.

The table below presents additional significant terms and conditions of the SLEECs:

Issuer	Issuance date	Distribution or interest payment dates	Annual yield	Redemption date at the issuer's option	Conversion date at the holder's option	Principal amount
Sun Life Capital Trust ⁽¹⁾⁽²⁾⁽³⁾⁽⁴⁾						
SLEECs B	June 25, 2002	June 30, December 31	7.093%	June 30, 2007	Any time	\$ 200

- (1) Subject to regulatory approval, the SL Capital Trusts may (i) redeem any outstanding SLEECs, in whole or in part, on the redemption date specified above or on any distribution date thereafter, or in the case of SLCT II, on any date thereafter, and (ii) may redeem all, but not part of any class of SLEECs upon occurrence of a Regulatory Event or a Tax Event, prior to the redemption date specified above.
- (2) The SLEECs B may be redeemed for cash equivalent to (i) the greater of the Early Redemption Price or the Redemption Price if the redemption occurs prior to June 30, 2032 or (ii) the Redemption Price if the redemption occurs on or after June 30, 2032. Redemption Price is equal to one thousand dollars plus the unpaid distributions, other than unpaid distributions resulting from a Missed Dividend Event, to the redemption date. Early Redemption Price for the SLEECs B is the price calculated to provide an annual yield, equal to the yield of a Government of Canada bond issued on the redemption date that has a maturity date of June 30, 2032, plus 32 basis points, plus the unpaid distributions, other than unpaid distributions resulting from a Missed Dividend Event, to the redemption date.
- (3) The non-cumulative perpetual preferred shares of Sun Life Assurance issued upon an Automatic Exchange Event in respect of the SLEECs B will become convertible, at the option of the holder, into a variable number of common shares of SLF Inc. on distribution dates on or after December 31, 2032.
- (4) Holders of SLEECs B may exchange, at any time, all or part of their SLEECs B units for non-cumulative perpetual preferred shares of Sun Life Assurance at an exchange rate for each SLEECs of 40 non-cumulative perpetual preferred shares of Sun Life Assurance. SLCT I will have the right, at any time before the exchange is completed, to arrange for a substituted purchaser to purchase SLEECs tendered for surrender to SLCT I so long as the holder of the SLEECs so tendered has not withheld consent to the purchase of its SLEECs. Any non-cumulative perpetual preferred shares issued in respect of an exchange by the holders of SLEECs B will become convertible, at the option of the holder, into a variable number of common shares of SLF Inc. on distribution dates on or after December 31, 2032.

14. Subordinated Debt

The following obligations are included in Subordinated debt as at December 31, and qualify as capital for Canadian regulatory purposes:

	Interest rate	Earliest par call or redemption date ⁽¹⁾	Maturity	2019	2018
Sun Life Assurance:					
Issued May 15, 1998 ⁽²⁾	6.30%	n/a	2028	\$ 150	\$ 150
Sun Life Financial Inc.:					
Issued May 29, 2007 ⁽³⁾	5.40%	May 29, 2037 ⁽⁴⁾	2042	398	398
Issued May 13, 2014 ⁽⁵⁾	2.77%	May 13, 2019	2024	–	250
Issued September 25, 2015 ⁽⁶⁾	2.60%	September 25, 2020	2025	500	499
Issued February 19, 2016 ⁽⁷⁾	3.10%	February 19, 2021	2026	349	349
Issued September 19, 2016 ⁽⁸⁾	3.05%	September 19, 2023 ⁽⁴⁾	2028	996	995
Issued November 23, 2017 ⁽⁹⁾	2.75%	November 23, 2022	2027	399	398
Issued August 7, 2019 ⁽¹⁰⁾	2.38%	August 13, 2024	2029	746	–
Total subordinated debt				\$ 3,538	\$ 3,039
Fair value				\$ 3,727	\$ 3,129

- (1) The debentures issued by SLF Inc. in 2007 are redeemable at any time and the debentures issued by SLF Inc. in 2014, 2015, 2016, and 2017 are redeemable on or after the date specified. From the date noted, the redemption price is par and redemption may only occur on a scheduled interest payment date. Redemption of all subordinated debentures is subject to regulatory approval.
- (2) 6.30% Debentures, Series 2, due 2028, issued by The Mutual Life Assurance Company of Canada, which subsequently changed its name to Clarica Life Insurance Company ("Clarica") and was amalgamated with Sun Life Assurance. These debentures are redeemable at any time. Prior to May 15, 2028, the redemption price is the greater of par and a price based on the yield of a corresponding Government of Canada bond plus 0.16%.
- (3) Series 2007-1 Subordinated Unsecured 5.40% Fixed/Floating Debentures due 2042. From May 29, 2037, interest is payable at 1.00% over Canadian dollar offered rate for three-month bankers' acceptances ("CDOR").
- (4) For redemption of the 2007 debentures prior to the date noted, and for redemptions of the September 19, 2016 debentures between September 19, 2021 and September 19, 2023, the redemption price is the greater of par and a price based on the yield of a corresponding Government of Canada bond plus 0.25% for the 2007 debentures and 0.52% for the September 19, 2016 debentures.
- (5) Series 2014-1 Subordinated Unsecured 2.77% Fixed/Floating Debentures due 2024. On May 13, 2019, SLF Inc. redeemed all of the outstanding \$250 principal amount of these debentures in accordance with the redemption terms attached to such debentures.
- (6) Series 2015-1 Subordinated Unsecured 2.60% Fixed/Floating Debentures due 2025. From September 25, 2020, interest is payable at 1.43% over CDOR.
- (7) Series 2016-1 Subordinated Unsecured 3.10% Fixed/Floating Debentures due 2026. From February 19, 2021, interest is payable at 2.20% over CDOR.
- (8) Series 2016-2 Subordinated Unsecured 3.05% Fixed/Floating Debentures due 2028. From September 19, 2023, interest is payable at 1.85% over CDOR.
- (9) Series 2017-1 Subordinated Unsecured 2.75% Fixed/Floating Debentures due 2027. From November 23, 2022, interest is payable at 0.74% over CDOR.
- (10) Series 2019-1 Subordinated Unsecured 2.38% Fixed/Floating Debentures due 2029. From August 13, 2024, interest is payable at 0.85% over CDOR.

Fair value is determined based on quoted market prices for identical or similar instruments. When quoted market prices are not available, fair value is determined from observable market data by dealers that are typically the market makers. The fair value is categorized in Level 2 of the fair value hierarchy.

Interest expense on subordinated debt was \$105 for 2019 and 2018.

15. Share Capital

The authorized share capital of SLF Inc. consists of the following:

- An unlimited number of common shares without nominal or par value. Each common share is entitled to one vote at meetings of the shareholders of SLF Inc. There are no pre-emptive, redemption, purchase, or conversion rights attached to the common shares.
- An unlimited number of Class A and Class B non-voting shares, issuable in series. The Board is authorized before issuing the shares, to fix the number, the consideration per share, the designation of, and the rights and restrictions of the Class A and Class B shares of each series, subject to the special rights and restrictions attached to all the Class A and Class B shares. The Board has authorized 13 series of Class A non-voting preferred shares, 10 of which are outstanding.

The common and preferred shares of SLF Inc. qualify as capital for Canadian regulatory purposes. See Note 21.

Dividends and Restrictions on the Payment of Dividends

Under the *Insurance Companies Act* (Canada), SLF Inc. and Sun Life Assurance are each prohibited from declaring or paying a dividend on any of its shares if there are reasonable grounds for believing that it is, or by paying the dividend would be, in contravention of: (i) the requirement that it maintains adequate capital and adequate and appropriate forms of liquidity, (ii) any regulations under the *Insurance Companies Act* (Canada) in relation to capital and liquidity, and (iii) any order by which OSFI directs it to increase its capital or provide additional liquidity.

SLF Inc. and Sun Life Assurance have each covenanted that, if a distribution is not paid when due on any outstanding SLEECs issued by the SL Capital Trusts, then (i) Sun Life Assurance will not pay dividends on its public preferred shares, if any are outstanding, and (ii) if Sun Life Assurance does not have any public preferred shares outstanding, then SLF Inc. will not pay dividends on its preferred shares or common shares, in each case, until the 12th month (in the case of the SLEECs issued by SLCT I) or 6th month (in the case of SLEECs issued by SLCT II) following the failure to pay the required distribution in full, unless the required distribution is paid to the holders of SLEECs. Public preferred shares means preferred shares issued by Sun Life Assurance which: (a) have been issued to the public (excluding any preferred shares held beneficially by affiliates of Sun Life Assurance); (b) are listed on a recognized stock exchange; and (c) have an aggregate liquidation entitlement of at least \$200. As at December 31, 2019, Sun Life Assurance did not have outstanding any shares that qualify as public preferred shares.

The terms of SLF Inc.'s outstanding preferred shares provide that for so long as Sun Life Assurance is a subsidiary of SLF Inc., no dividends on such preferred shares are to be declared or paid if Sun Life Assurance's minimum regulatory capital ratio falls below the applicable threshold.

In addition, under the terms of SLF Inc.'s outstanding preferred shares, SLF Inc. cannot pay dividends on its common shares without the approval of the holders of those preferred shares unless all dividends on the preferred shares for the last completed period for which dividends are payable have been declared and paid or set apart for payment.

Currently, the above limitations do not restrict the payment of dividends on SLF Inc.'s preferred or common shares.

The declaration and payment of dividends on SLF Inc.'s shares are at the sole discretion of the Board of Directors and will be dependent upon our earnings, financial condition and capital requirements. Dividends may be adjusted or eliminated at the discretion of the Board on the basis of these or other considerations.

15.A Common Shares

The changes in common shares issued and outstanding for the years ended December 31 were as follows:

	2019		2018	
	Number of shares	Amount	Number of shares	Amount
Common shares (in millions of shares)				
Balance, January 1	598.5	\$ 8,419	610.5	\$ 8,582
Stock options exercised (Note 19)	0.8	28	0.4	16
Common shares purchased for cancellation	(11.5)	(158)	(12.5) ⁽¹⁾	(183)
Common shares issued as consideration for business acquisition	–	–	0.1	4
Balance, December 31	587.8	\$ 8,289	598.5	\$ 8,419

(1) 1.1 million shares were purchased pursuant to a third-party share repurchase program under an issuer bid exemption order at a discount to the prevailing market price of the common shares on the Toronto Stock Exchange.

On August 14, 2019, SLF Inc. launched a normal course issuer bid to purchase and cancel up to 15 million common shares of SLF Inc. ("common shares") between August 14, 2019 and August 13, 2020 (the "2019 NCIB") and implemented an automatic repurchase plan with its designated broker in order to facilitate purchases of common shares under such bid. Under such automatic repurchase plan, SLF Inc.'s designated broker may purchase common shares pursuant to the 2019 NCIB at times when SLF Inc. ordinarily would not be active in the market due to regulatory restrictions or self-imposed blackout periods. SLF Inc. launched a normal course issuer bid on August 14, 2018 and amended it effective May 14, 2019 (the "2018 NCIB"). Under the 2018 NCIB, SLF Inc. was authorized to purchase and cancel up to 18 million common shares between August 14, 2018 and August 13, 2019. On August 14, 2017, SLF Inc. launched a normal course issuer bid to purchase and cancel up to 11.5 million common shares between August 14, 2017 and August 13, 2018 (the "2017 NCIB" and, together with the 2018 NCIB and the 2019 NCIB, the "NCIBs").

Pursuant to each of the NCIBs, common shares purchased for cancellation were (or, in the case of the 2019 NCIB, are) able to be purchased through the facilities of the Toronto Stock Exchange, other Canadian stock exchanges, and/or alternative Canadian trading platforms, at prevailing market rates, or by way of private agreements or share repurchase programs under issuer bid exemption orders issued by securities regulatory authorities at a discount to the prevailing market price.

In 2019, SLF Inc. purchased and cancelled approximately 11.4 million common shares at an average price per share of \$52.01 for a total amount of \$592 under the 2018 NCIB and 2019 NCIB. An additional 0.1 million common shares purchased in 2018, at an average price per share of \$44.91 for a total amount of \$6, were subsequently cancelled in 2019. The total amount paid to purchase the shares is allocated to Common shares and Retained earnings in our Consolidated Statements of Changes in Equity. The amount allocated to Common shares is based on the average cost per common share and amounts paid above the average cost are allocated to Retained earnings.

15.B Preferred Shares

The were no changes in preferred shares issued and outstanding for the years ended December 31, 2019 and December 31, 2018.

Further information on the preferred shares outstanding as at December 31, 2019, is as follows:

Class A Preferred shares (in millions of shares)	Issue date	Annual dividend rate	Annual dividend per share	Earliest par call or redemption date ⁽¹⁾	Number of shares	Face amount	Net amount ⁽²⁾
Series 1	February 25, 2005	4.75%	\$ 1.19	Any time	16.0	\$ 400	\$ 394
Series 2	July 15, 2005	4.80%	\$ 1.20	Any time	13.0	325	318
Series 3	January 13, 2006	4.45%	\$ 1.11	Any time	10.0	250	245
Series 4	October 10, 2006	4.45%	\$ 1.11	Any time	12.0	300	293
Series 5	February 2, 2007	4.50%	\$ 1.13	Any time	10.0	250	245
Series 8R ⁽³⁾	May 25, 2010	2.275% ⁽³⁾	\$ 0.57	June 30, 2020 ⁽⁴⁾	5.2	130	127
Series 9QR ⁽⁵⁾	June 30, 2015	Floating ⁽⁶⁾	Floating	June 30, 2020 ⁽⁷⁾	6.0	150	147
Series 10R ⁽³⁾	August 12, 2011	2.842% ⁽³⁾	\$ 0.71 ⁽⁸⁾	September 30, 2021 ⁽⁴⁾	6.9	173	169
Series 11QR ⁽⁵⁾	September 30, 2016	Floating ⁽⁶⁾	Floating	September 30, 2021 ⁽⁷⁾	1.1	27	26
Series 12R ⁽³⁾	November 10, 2011	3.806% ⁽³⁾	\$ 0.95 ⁽⁸⁾	December 31, 2021 ⁽⁴⁾	12.0	300	293
Total preferred shares					92.2	\$ 2,305	\$ 2,257

(1) Redemption of all preferred shares is subject to regulatory approval.

(2) Net of after-tax issuance costs.

(3) On the earliest redemption date and every five years thereafter, the dividend rate will reset to an annual rate equal to the 5-year Government of Canada bond yield plus a spread specified for each series. The specified spread for Class A shares is: Series 8R – 1.41%, Series 10R – 2.17%, and Class A Non-Cumulative 5-Year Rate Reset Preferred Shares Series 12R (“Series 12R Shares”) – 2.73%. On the earliest redemption date and every five years thereafter, holders will have the right, at their option, to convert their shares into the series that is one number higher than their existing series.

(4) Redeemable on the redemption date and every five years thereafter, in whole or in part, at \$25.00 per share.

(5) On the earliest redemption date and every five years thereafter, holders will have the right, at their option, to convert those shares into the series that is one number lower than their existing series.

(6) Holders are entitled to receive quarterly floating rate non-cumulative dividends at an annual rate equal to the then 3-month Government of Canada treasury bill yield plus a spread specified for each series. The specified spread for Class A shares is: Series 9QR – 1.41% and Series 11QR – 2.17%.

(7) Redeemable on the redemption date and every five years thereafter, in whole or in part, at \$25.00 per share, and on any other date at \$25.50 per share.

(8) The annual dividend per share in the table above is the amount paid per share in 2019.

16. Interests in Other Entities

16.A Subsidiaries

Our principal subsidiaries are Sun Life Assurance and Sun Life Global Investments Inc. Sun Life Assurance is our principal operating insurance company and holds our insurance operations in Canada, the U.S., the UK, the Philippines, Hong Kong, Indonesia and Vietnam. These insurance operations are operated directly by Sun Life Assurance or through other subsidiaries. Sun Life Global Investments Inc. is a non-operating holding company that holds our asset management businesses, including Massachusetts Financial Services and the group of companies under SLC Management.

We are required to comply with various regulatory capital and solvency requirements in the jurisdictions in which we operate that may restrict our ability to access or use the assets of the group and to pay dividends. Further details on these restrictions are included in Notes 15 and 21.

16.B Joint Ventures and Associates

We have interests in various joint ventures and associates that principally operate in India, Malaysia, China, and the Philippines. We also have interests in joint ventures related to certain real estate investments in Canada. Our interests in these joint ventures and associates range from 24.99% to 50%. The following table summarizes, in aggregate, the financial information of these joint ventures and associates:

As at or for the years ended December 31,	2019	2018
Carrying amount of interests in joint ventures and associates	\$ 1,510	\$ 1,500
Our share of:		
Net income (loss)	86	91
Other comprehensive income (loss)	(9)	7
Total comprehensive income (loss)	\$ 77	\$ 98

In 2019, our investment in our joint ventures and associates changed by \$19 (\$64 in 2018), primarily in Canada.

During 2019, we received dividends from our joint ventures and associates of \$45 (\$34 in 2018). We also incurred rental expenses of \$17 (\$16 in 2018) related to leases with our joint ventures and associates, with the remaining future rental payments payable to our joint ventures and associates totaling \$212 over 13 years.

16.C Joint Operations

We invest jointly in investment properties and owner-occupied properties which are co-managed under contractual relationships with the other investors. We share in the revenues and expenses generated by these properties in proportion to our investment. The carrying amount

of these jointly controlled assets, which is included in Investment properties and in Other Assets for owner-occupied properties, is \$1,503 as at December 31, 2019 (\$1,223 as at December 31, 2018). The fair value of these jointly controlled assets is \$1,595 as at December 31, 2019 (\$1,307 as at December 31, 2018).

16.D Unconsolidated Structured Entities

SLF Inc. and its subsidiaries have interests in various structured entities that are not consolidated by us. A structured entity is an entity that has been designed so that voting or similar rights are not the dominant factor in deciding who controls the entity, such as when any voting rights relate to administrative tasks only and the relevant activities are directed by means of contractual arrangements. We have an interest in a structured entity when we have a contractual or non-contractual involvement that exposes us to variable returns from the performance of the entity. Our interest includes investments held in securities or units issued by these entities and fees earned from management of the assets within these entities.

Information on our interests in unconsolidated structured entities is as follows:

As at December 31,		2019		2018		
Type of structured entity	Type of investment held	Consolidated Statements of Financial Position line item	Carrying amount	Maximum exposure to loss ⁽¹⁾	Carrying amount	Maximum exposure to loss ⁽¹⁾
Securitization entities – third-party managed	Debt securities	Debt securities	\$ 8,402	\$ 8,402	\$ 7,366	\$ 7,366
Securitization entities – third-party managed	Short-term securities	Cash, cash equivalents and short-term securities	\$ 498	\$ 498	\$ 430	\$ 430
Investment funds – third-party managed	Investment fund units	Equity securities	\$ 3,453	\$ 3,453	\$ 3,439	\$ 3,439
Investment funds – company managed ⁽²⁾	Investment fund units and Limited partnership units	Equity securities and Other invested assets	\$ 2,293	\$ 2,293	\$ 1,705	\$ 1,705
Limited partnerships – third-party managed	Limited partnership units	Other invested assets	\$ 1,682	\$ 1,682	\$ 1,557	\$ 1,557

(1) The maximum exposure to loss is the maximum loss that we could record through comprehensive income as a result of our involvement with these entities.

(2) Includes investments in funds managed by our joint ventures with a carrying amount of \$204 (\$213 in 2018).

16.D.i Securitization Entities

Securitization entities are structured entities that are generally financed primarily through the issuance of debt securities that are backed by a pool of assets, such as mortgages or loans.

Third-Party Managed

Our investments in third-party managed securitization entities consist of asset-backed securities, such as commercial mortgage-backed securities, residential mortgage-backed securities, collateralized debt obligations (“CDOs”), and commercial paper. These securities are generally large-issue debt securities designed to transform the cash flows from a specific pool of underlying assets into tranches providing various risk exposures for investment purposes. We do not provide financial or other support to these entities other than our original investment and therefore our maximum exposure to loss on these investments is limited to the carrying amount of our investment. We do not have control over these investments since we do not have power to direct the relevant activities of these entities, regardless of the level of our investment.

Company Managed

We provide collateral management services to various securitization entities, primarily CDOs, from which we earn a fee for our services. The financial support provided to these entities is limited to the carrying amount of our investment in these entities. We provide no guarantees or other contingent support to these entities. We have not consolidated these entities since we do not have significant variability from our interests in these entities and we do not have any investment in these entities.

16.D.ii Investment Funds and Limited Partnerships

Investment funds and limited partnerships are investment vehicles that consist of a pool of funds collected from a group of investors for the purpose of investing in assets such as money market instruments, debt securities, equity securities, real estate, and other similar assets. The preceding table includes our investments in all investment funds, including mutual funds, exchange-traded funds, and segregated funds, and our investments in certain limited partnerships. Some of these investment funds and limited partnerships are structured entities. For all investment funds and limited partnerships, our maximum exposure to loss is equivalent to the carrying amount of our investment in the fund or partnership. Investment funds and limited partnerships are generally financed through the issuance of investment fund units or limited partnership units.

Third-Party Managed

We hold units in investment funds and limited partnerships managed by third-party asset managers. Our investments in fund units and limited partnership units generally give us an undivided interest in the investment performance of a portfolio of underlying assets managed or tracked to a specific investment mandate for investment purposes. We do not have control over investment funds or limited partnerships that are structured entities since we do not have power to direct their relevant activities.

Company Managed

We hold units in Company managed investment funds and limited partnerships. We generally have power over Company managed investment funds and limited partnerships that are structured entities since we have power to direct the relevant activities of the funds and limited

partnerships. However, we have not consolidated these funds and limited partnerships since we do not have significant variability from our interests in these funds and limited partnerships. We earn management fees from the management of these investment funds and limited partnerships that are commensurate with the services provided and are reported in Fee income. Management fees are generally based on the value of the assets under management. Therefore, the fees earned are impacted by the composition of the assets under management and fluctuations in financial markets. The fee income earned is included in Fund management and other asset based fees in Note 17. We also hold units in investment funds and limited partnerships managed by our joint ventures. Our share of the management fees earned is included as part of the Net income (loss) reported in Note 16.B.

16.E Consolidated Structured Entities

A significant structured entity consolidated by us is the entity that issued the senior financing that is described in more detail in Note 12.C. We also consolidate certain investment funds managed by SLC Management that invest primarily in mortgages and investment properties.

17. Fee Income

Fee income for the years ended December 31 consists of the following:

	2019	2018
Fee income from insurance contracts	\$ 1,017	\$ 968
Fee income from service contracts:		
Distribution fees	820	829
Fund management and other asset-based fees	3,662	3,444
Administrative service and other fees	752	725
Total fee income	\$ 6,251	\$ 5,966

Distribution fees and Fund management and other asset-based fees are primarily earned in the Asset Management segment. Administrative service and other fees are primarily earned in the Canada segment. The fee income by business segment is presented in Note 4.

18. Operating Expenses

Operating expenses for the years ended December 31 consist of the following:

	2019	2018
Employee expenses ⁽¹⁾	\$ 4,090	\$ 3,707
Premises and equipment	163	268
Capital asset depreciation	241	107
Service fees	919	870
Amortization of intangible assets (Note 9)	137	119
Impairment of intangible assets (Note 9)	15	–
Other expenses	1,468	1,361
Total operating expenses	\$ 7,033	\$ 6,432

(1) See table below for further details.

Employee expenses for the years ended December 31 consist of the following:

	2019	2018
Salaries, bonus, employee benefits	\$ 3,497	\$ 3,322
Share-based payments (Note 19)	549	346
Other personnel costs	44	39
Total employee expenses	\$ 4,090	\$ 3,707

19. Share-Based Payments

19.A Stock Option Plans

SLF Inc. has granted stock options to eligible employees under the Executive Stock Option Plan. These options are granted at the closing price of the common shares on the Toronto Stock Exchange (“TSX”) on the grant date. The options granted under the stock option plans vest over a four-year period. All options have a maximum exercise period of 10 years. The maximum number of common shares that may be issued under the Executive Stock Option Plan is 29,525,000 shares.

The activities in the stock option plans for the years ended December 31 are as follows:

	2019		2018	
	Number of stock options (thousands)	Weighted average exercise price	Number of stock options (thousands)	Weighted average exercise price
Balance, January 1,	3,101	\$ 37.06	3,008	\$ 33.88
Granted	745	\$ 50.58	517	\$ 53.96
Exercised	(772)	\$ 29.01	(399)	\$ 34.57
Forfeited	–	\$ –	(25)	\$ 43.79
Balance, December 31,	<u>3,074</u>	<u>\$ 42.36</u>	<u>3,101</u>	<u>\$ 37.06</u>
Exercisable, December 31,	<u>1,670</u>	<u>\$ 35.51</u>	<u>2,041</u>	<u>\$ 30.97</u>

The average share price at the date of exercise of stock options for the year ended December 31, 2019 was \$53.22 (\$53.28 for 2018).

Compensation expense for stock options was \$4 for the year ended December 31, 2019 (\$3 for 2018).

The stock options outstanding as at December 31, 2019, by exercise price, are as follows:

Range of exercise prices	Number of stock options (thousands)	Weighted average remaining contractual life (years)	Weighted average exercise price
\$18.00 to \$24.00	407	2.16	\$ 21.53
\$24.01 to \$30.00	176	3.16	\$ 28.20
\$30.01 to \$35.00	82	0.72	\$ 31.03
\$35.01 to \$45.00	794	5.29	\$ 39.50
\$45.01 to \$53.96	<u>1,615</u>	<u>8.40</u>	<u>\$ 51.14</u>
Total stock options	<u>3,074</u>	<u>6.27</u>	<u>\$ 42.36</u>

The weighted average fair values of the stock options, calculated using the Black-Scholes option pricing model, granted during the year ended December 31, 2019 was \$5.56 (\$7.00 for 2018). The Black-Scholes option pricing model used the following assumptions to determine the fair value of options granted during the years ending December 31:

Weighted average assumptions	2019	2018
Risk-free interest rate	1.8%	2.2%
Expected volatility	19.5%	21.3%
Expected dividend yield	4%	4%
Expected life of the option (in years)	6.3	6.3
Exercise price	\$ 50.58	\$ 53.96

Expected volatility is based on historical volatility of the common shares, implied volatilities from traded options on the common shares, and other factors. The expected term of options granted is derived based on historical employee exercise behaviour and employee termination experience. The risk-free rate for periods within the expected term of the option is based on the Canadian government bond yield curve in effect at the time of grant.

19.B Employee Share Ownership Plan

In Canada, we match eligible employees' contributions to the Sun Life Financial Employee Stock Plan. Employees may elect to contribute from 1% to 20% of their target annual compensation to the Sun Life Financial Employee Stock Plan. Under this plan the match is provided for employees who have met one year of employment eligibility and is equal to 50% of the employee's contributions up to 5% of an employee's annual compensation. The match is further capped by a one thousand five hundred dollar annual maximum. Our contributions vest immediately and are expensed.

In 2019, we introduced the Sun Life Financial U.S. Employee Stock Purchase Plan which allows eligible employees to buy shares of SLF Inc. at a 10% discount at the end of six-month offering windows. Under this plan, employees who enroll can contribute from 1% to 10% of their base salary. At the end of each window, accumulated employee amounts are used to purchase stock, with the Company financing the 10% discount. The total annual contribution, including the company discount, is limited to U.S. twenty-five thousand dollars.

We recorded an expense of \$8 for the year ended December 31, 2019 (\$8 for 2018).

19.C Other Share-Based Payment Plans

All other share-based payment plans use notional units that are valued based on the common share price on the TSX. Any fluctuation in the common share price changes the value of the units, which affects our share-based payment compensation expense. Upon redemption of these units, payments are made to the employees with a corresponding reduction in the accrued liability. We use equity swaps and forwards to hedge our exposure to variations in cash flows due to changes in the common share price for all of these plans.

Details of these plans are as follows:

Senior Executives' Deferred Share Unit ("DSU") Plan: Under the DSU plan, designated executives may elect to receive all or a portion of their annual incentive award in the form of DSUs. Each DSU is equivalent in value to one common share and earns dividend equivalents in the form of additional DSUs at the same rate as the dividends on common shares. The designated executives must elect to participate in the plan prior to the beginning of the plan year and this election is irrevocable. Awards generally vest immediately; however, participants are not permitted to redeem the DSUs until after termination, death, or retirement. The value at the time of redemption will be based on the fair value of the common shares immediately before their redemption.

Sun Share Unit ("Sun Share") Plan: Under the Sun Share plan, participants are granted units that are equivalent in value to one common share and have a grant price equal to the average of the closing price of a common share on the TSX on the five trading days immediately prior to the date of grant. Participants generally hold units for up to 36 months from the date of grant. The units earn dividend equivalents in the form of additional units at the same rate as the dividends on common shares. Units may vest or become payable if we meet specified threshold performance targets. The plan provides for performance factors to motivate participants to achieve a higher return for shareholders (performance factors are determined through a multiplier that can be as low as zero or as high as two times the number of units that vest). Payments to participants are based on the number of units vested multiplied by the average closing price of a common share on the TSX on the five trading days immediately prior to the vesting date.

Additional information for other share-based payment plans: The units outstanding under these plans and the liabilities recognized for these units in our Consolidated Statements of Financial Position are summarized in the following table:

Number of units (in thousands)	Sun Shares	DSUs	Total
Units outstanding December 31, 2019	5,521	930	6,451
Units outstanding December 31, 2018	5,967	854	6,821
Liability accrued as at December 31, 2019	\$ 257	\$ 51	\$ 308
Liability accrued as at December 31, 2018	\$ 200	\$ 35	\$ 235

Compensation expense and the income tax expense (benefit) for other share-based payment plans for the years ended December 31 are shown in the following table. Since expenses for the DSUs are accrued as part of incentive compensation in the year awarded, the expenses below do not include these accruals. The expenses presented in the following table include increases in the liabilities for Sun Shares and DSUs due to changes in the fair value of the common shares and the accruals of the Sun Shares liabilities over the vesting period, and exclude any adjustment in expenses due to the impact of hedging.

For the years ended December 31,	2019	2018
Compensation expense	\$ 205	\$ 87
Income tax expense (benefit)	\$ (53)	\$ (21)

19.D Share-Based Payment Plans of MFS

Share-based payment awards within MFS are based on their own shares. Restricted share awards and stock option awards are settled in MFS shares and restricted stock unit awards are settled in cash. Restricted share awards, restricted stock unit awards, and stock option awards generally vest over a four-year period and continued employment is generally the only service requirement for these awards. Holders of restricted share awards and restricted stock unit awards are entitled to receive non-forfeitable dividend equivalent payments during the vesting period at the same rate as the dividends on MFS's shares.

Although restricted share awards and stock option awards are settled in shares, all of the MFS share-based awards, including outstanding MFS shares, are accounted for as cash-settled share-based payment awards due to the fact that MFS has a practice of repurchasing its outstanding shares after a specified holding period. The fair value of stock option awards is determined using the Black-Scholes option pricing model, while the fair value of restricted share awards, restricted stock unit awards, and outstanding MFS shares are estimated using a market consistent share valuation model. The amount of periodic compensation expense recognized is impacted by grants of new awards, vesting, exercise, and forfeiture of unvested awards, share repurchases, changes in fair value of awards, and outstanding MFS shares. The total liability accrued attributable to all MFS share-based payment plans as at December 31, 2019 was \$810 (\$831 as at December 31, 2018) which includes a liability of \$644 (\$677 as at December 31, 2018) for the stock options, restricted shares, and outstanding MFS shares.

Compensation expense and the income tax expense (benefit) for these awards for the years ended December 31 are shown in the following table:

For the years ended December 31,	2019	2018
Compensation expense	\$ 332	\$ 248
Income tax expense (benefit)	\$ (58)	\$ (49)

20. Income Taxes

20.A Deferred Income Taxes

The following represents the deferred tax assets and liabilities in the Consolidated Statements of Financial Position:

For the years ended December 31,	2019	2018
Deferred tax assets ⁽¹⁾	\$ 1,455	\$ 1,209
Deferred tax liabilities ⁽¹⁾	406	322
Net deferred tax asset	\$ 1,049	\$ 887

(1) Our deferred tax assets and deferred tax liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities and when the deferred taxes relate to the same taxable entity and the same taxation authority.

The movement in net deferred tax assets for the years ended December 31, are as follows:

	Investments	Policy liabilities ⁽¹⁾	Deferred acquisition costs	Losses available for carry forward	Pension and other employee benefits	Other ⁽²⁾	Total
As at December 31, 2018	\$ (746)	\$ 737	\$ 96	\$ 648	\$ 319	\$ (167)	\$ 887
Acquisitions (disposals)	–	–	–	–	–	(48)	(48)
Charged to statement of operations	(263)	406	(9)	63	7	50	254
Charged to other comprehensive income	(52)	(9)	–	(10)	21	(1)	(51)
Charged to equity, other than other comprehensive income	–	–	–	–	–	9	9
Foreign exchange rate movements and Other	21	(13)	(4)	(4)	(9)	7	(2)
As at December 31, 2019	\$ (1,040)	\$ 1,121	\$ 83	\$ 697	\$ 338	\$ (150)	\$ 1,049

(1) Consists of Insurance contract liabilities and Investment contract liabilities, net of Reinsurance assets.

(2) Includes unused tax credits.

	Investments	Policy liabilities ⁽¹⁾	Deferred acquisition costs	Losses available for carry forward	Pension and other employee benefits	Other ⁽²⁾	Total
As at December 31, 2017	\$ (957)	\$ 896	\$ 77	\$ 549	\$ 351	\$ (24)	\$ 892
Charged to statement of operations	195	(170)	6	107	(26)	(149)	(37)
Charged to other comprehensive income	45	–	–	(13)	(17)	9	24
Charged to equity, other than other comprehensive income	–	–	6	–	–	3	9
Foreign exchange rate movements and Other	(29)	11	7	5	11	(6)	(1)
As at December 31, 2018	\$ (746)	\$ 737	\$ 96	\$ 648	\$ 319	\$ (167)	\$ 887

(1) Consists of Insurance contract liabilities and Investment contract liabilities, net of Reinsurance assets.

(2) Includes unused tax credits.

We have accumulated non-capital tax losses, primarily in Canada, the Philippines, the UK and Indonesia, totaling \$3,317 (\$3,245 in 2018). The benefit of these tax losses has been recognized to the extent that it is probable that the benefit will be realized. In addition, in the U.S., we have net capital losses of \$1 (\$30 in 2018) for which a deferred tax asset of less than \$1 (\$6 in 2018) has been recognized. Unused tax losses for which a deferred tax asset has not been recognized amount to \$553 as of December 31, 2019 (\$702 in 2018) primarily in the Philippines and Indonesia. We also have capital losses of \$455 in the UK (\$460 in 2018) and \$178 in Canada (\$176 in 2018) for which a deferred tax asset of \$101 (\$102 in 2018) has not been recognized.

We will realize the benefit of tax losses carried forward in future years through a reduction in current income taxes as and when the losses are utilized. These tax losses are subject to examination by various tax authorities and could be reduced as a result of the adjustments to tax returns. Furthermore, legislative, business or other changes may limit our ability to utilize these losses.

Included in the deferred tax asset related to losses available for carry forward are tax benefits that have been recognized on losses incurred in either the current or the preceding year. In determining if it is appropriate to recognize these tax benefits, we rely on projections of future taxable profits, and we also consider tax planning opportunities that will create taxable income in the period in which the unused tax losses can be utilized.

The non-capital losses carried forward in Canada expire beginning in 2028 and the capital losses can be carried forward indefinitely. The operating and capital losses in the UK can be carried forward indefinitely. The non-capital losses in the Philippines can be carried forward three years, and the non-capital losses in Indonesia can be carried forward five years.

We recognize a deferred tax liability on all temporary differences associated with investments in subsidiaries, branches, joint ventures and associates unless we are able to control the timing of the reversal of these differences and it is probable that these differences will not reverse in the foreseeable future. As at December 31, 2019, temporary differences associated with investments in subsidiaries, branches, joint ventures and associates for which a deferred tax liability has not been recognized amount to \$6,068 (\$5,723 in 2018).

20.B Income Tax Expense (Benefit)

20.B.i In our Consolidated Statements of Operations, Income tax expense (benefit) for the years ended December 31 has the following components:

	2019	2018
Current income tax expense (benefit):		
Current year	\$ 620	\$ 561
Adjustments in respect of prior years, including resolution of tax disputes	(80)	(1)
Total current income tax expense (benefit)	540	560
Deferred income tax expense (benefit):		
Origination and reversal of temporary differences	(240)	42
Adjustments in respect of prior years, including resolution of tax disputes	(24)	(9)
Tax expense (benefit) arising from unrecognized tax losses	8	4
Tax rate and other legislative changes	2	–
Total deferred income tax expense (benefit)	(254)	37
Total income tax expense (benefit)	\$ 286	\$ 597

20.B.ii Income tax benefit (expense) recognized directly in equity for the years ended December 31:

	2019	2018
Recognized in other comprehensive income:		
Current income tax benefit (expense)	\$ (12)	\$ (4)
Deferred income tax benefit (expense)	(51)	24
Total recognized in other comprehensive income	(63)	20
Recognized in equity, other than other comprehensive income:		
Deferred income tax benefit (expense)	9	9
Total income tax benefit (expense) recorded in equity, including tax benefit (expense) recorded in Other comprehensive income	\$ (54)	\$ 29

20.B.iii Our effective income tax rate differs from the combined Canadian federal and provincial statutory income tax rate as follows:

For the years ended December 31,	2019		2018	
		%		%
Total net income (loss)	\$ 2,947		\$ 2,914	
Add: Income tax expense (benefit)	286		597	
Total net income (loss) before income taxes	\$ 3,233		\$ 3,511	
Taxes at the combined Canadian federal and provincial statutory income tax rate	\$ 857	26.5	\$ 939	26.8
Increase (decrease) in rate resulting from:				
Tax-exempt investment income	(260)	(8.0)	(131)	(3.8)
Higher (lower) effective rates on income subject to taxation in foreign jurisdictions	(194)	(6.0)	(222)	(6.3)
Adjustments in respect of prior years, including resolution of tax disputes	(104)	(3.2)	(10)	(0.3)
Tax (benefit) cost of unrecognized tax losses and tax credits	8	0.2	4	0.1
Tax rate and other legislative changes	2	0.1	–	–
Other	(23)	(0.8)	17	0.5
Total tax expense (benefit) and effective income tax rate	\$ 286	8.8	\$ 597	17.0

In the second quarter of 2019, a provincial corporate tax rate decrease from 12% to 8% was enacted in Alberta, Canada. As a result, our statutory tax rate decreased from 26.75% (rounded to 26.8% in the table above) in 2018 to 26.5% in 2019 and future years.

Tax-exempt investment income includes tax rate differences related to various types of investment income that is taxed at rates lower than our statutory income tax rate, such as dividend income, capital gains arising in Canada, and various others. Fluctuations in foreign exchange rates, changes in market values of real estate properties and other investments have an impact on the amount of these tax rate differences.

Statutory income tax rates in other jurisdictions in which we conduct business range from 0% to 30%, which creates a tax rate differential and corresponding tax provision difference compared to the Canadian federal and provincial statutory rate when applied to foreign income not subject to tax in Canada. Generally, higher earnings in jurisdictions with higher statutory tax rates result in an increase of our tax expense, while earnings arising in tax jurisdictions with statutory rates lower than 26.5% reduce our tax expense. These differences are reported in Higher (lower) effective rates on income subject to taxation in foreign jurisdictions. The benefit reported in 2019 included lower income in jurisdictions with low statutory income tax rates compared to 2018.

Adjustments in respect of prior periods, including the resolution of tax disputes, relates mainly to the resolution of Canadian tax matters, and the finalization of the prior year's Canadian and U.S. tax filings in 2019. In 2018, it related to tax audit adjustments and the finalization of tax filings in Canada, Asia and the U.S.

Tax (benefit) cost of unrecognized tax losses/tax credits reflects unrecognized losses in Asia.

Tax rate and other legislative changes relates to the corporate tax rate decrease in Alberta in 2019.

Other primarily reflects withholding taxes on distributions from our foreign subsidiaries and the benefit relating to investments in joint ventures in Asia. In 2019, Other also reflects the reversal of withholding taxes no longer expected to be paid.

21. Capital Management

21.A Capital

Our capital base is structured to exceed minimum regulatory and internal capital targets and maintain strong credit and financial strength ratings while maintaining a capital efficient structure. We strive to achieve an optimal capital structure by balancing the use of debt and equity financing. Capital is managed both on a consolidated basis under principles that consider all the risks associated with the business as well as at the business group level under the principles appropriate to the jurisdiction in which each operates. We manage the capital for all of our international subsidiaries on a local statutory basis in a manner commensurate with their individual risk profiles.

The Board of Directors of SLF Inc. is responsible for the annual review and approval of the Company's capital plan and capital risk policy. Management oversight of our capital programs and position is provided by the Company's Executive Risk Committee, the membership of which includes senior management from the finance, actuarial, and risk management functions.

We engage in a capital planning process annually in which capital deployment options, fundraising, and dividend recommendations are presented to the Risk & Conduct Review Committee of the Board of Directors. Capital reviews are regularly conducted which consider the potential impacts under various business, interest rate, and equity market scenarios. Relevant components of these capital reviews, including dividend recommendations, are presented to the Risk & Conduct Review Committee on a quarterly basis. The Board of Directors is responsible for the approval of the dividend recommendations.

The capital risk policy is designed to ensure that adequate capital is maintained to provide the flexibility necessary to take advantage of growth opportunities, to support the risks associated with our businesses and to optimize return to our shareholders. This policy is also intended to provide an appropriate level of risk management over capital adequacy risk, which is defined as the risk that capital is not or will not be sufficient to withstand adverse economic conditions, to maintain financial strength or to allow us and our subsidiaries to support ongoing operations and to take advantage of opportunities for expansion. SLF Inc. manages its capital in a manner commensurate with its risk profile and control environment.

SLF Inc. is a non-operating insurance company and is subject to the LICAT guideline. As at December 31, 2019, SLF Inc.'s LICAT ratio exceeds the regulatory minimum ratio as set out by OSFI.

Sun Life Assurance, SLF's principal operating life insurance subsidiary in Canada, is also subject to the LICAT guideline. With a LICAT Ratio of 130% as at December 31, 2019, Sun Life Assurance's LICAT Ratio is above OSFI's Supervisory Target Total Ratio of 100% and minimum Total Ratio of 90%.

OSFI may intervene and assume control of a Canadian life insurance company if it deems the amount of available capital insufficient. Capital requirements may be adjusted by OSFI in the future, as experience develops or the risk profile of Canadian life insurers changes or to reflect other risks. Sun Life Assurance exceeded levels that would require regulatory or corrective action as at December 31, 2019 and December 31, 2018.

The Company's regulated subsidiaries must comply with the capital adequacy requirements imposed in the jurisdictions in which they operate. In certain jurisdictions, the payment of dividends from our subsidiaries is subject to maintaining capital levels exceeding regulatory targets and/or receiving regulatory approval. We maintained capital levels above minimum local requirements as at December 31, 2019 and December 31, 2018.

In the U.S., Sun Life Assurance operates through a branch which is subject to U.S. regulatory supervision and it exceeded the levels under which regulatory action would be required as at December 31, 2019 and December 31, 2018. In the U.S., we use captive reinsurance arrangements to provide efficient financing of U.S. statutory reserve requirements in excess of those required under IFRS. Under one such arrangement, the funding of these reserve requirements is supported by a guarantee from SLF Inc.

Our capital base consists mainly of common shareholders' equity, preferred shareholders' equity, participating policyholders' equity, non-controlling interests' equity and certain other capital securities that qualify as regulatory capital. For regulatory reporting purposes under the LICAT framework, there were further adjustments, including goodwill, non-life investments, and others as was prescribed by OSFI, to the total capital figure presented in the table below:

As at December 31,	2019	2018
Subordinated debt	\$ 3,538	\$ 3,039
Innovative capital instruments ⁽¹⁾	200	699
Equity:		
Preferred shareholders' equity	2,257	2,257
Common shareholders' equity	21,141	21,449
Participating policyholders' equity	1,091	864
Non-controlling interests' equity	19	–
Total capital	\$ 28,246	\$ 28,308

(1) Innovative capital instruments are SLEECs issued by the SL Capital Trusts (Note 13). The SL Capital Trusts are not consolidated by us.

21.B Participating Account Seed Capital

In the first quarter of 2018, with OSFI's approval, seed capital, together with interest earned since demutualization, was transferred from the participating account to the shareholder account. The transfer of seed capital is recorded on our Consolidated Statements of Changes in Equity as a Transfer from participating policyholders' equity totaling \$89, comprised of \$50 in Canada and \$39 in U.S. The transfer of interest on seed capital is included as a reduction in Participating policyholders' net income (loss) and an increase in Shareholders' net income (loss) totaling \$110, on a pre- and post-tax basis, comprised of \$75 in Canada and \$35 in U.S. At the time of demutualization, OSFI required shareholders to transfer seed capital into the participating account to support participating insurance policies sold after demutualization. It was anticipated that over time the seed capital would no longer be needed and that the seed capital and accumulated interest would be returned to the shareholders, subject to OSFI's approval. The transfer has no impact on regulatory capital requirements, and will have no adverse impact on the policy dividends or security of benefits of participating policyholders.

22. Segregated Funds

We have segregated fund products, including variable annuities, unit-linked products and universal life insurance policies, in Canada, the U.S., the UK, and Asia. Under these contracts, the benefit amount is contractually linked to the fair value of the investments in the particular segregated fund. Policyholders can select from a variety of categories of segregated fund investments. Although the underlying assets are registered in our name and the segregated fund contract holder has no direct access to the specific assets, the contractual arrangements are such that the segregated fund policyholder bears the risk and rewards of the funds' investment performance. Therefore, net realized gains and losses, other net investment income earned, and expenses incurred on the segregated funds are attributable to policyholders and not to us. However, certain contracts include guarantees from us. We are exposed to equity market risk and interest rate risk as a result of these guarantees. Further details on these guarantees and our risk management activities related to these guarantees are included in the Risk Management section of the MD&A.

We derive fee income from segregated funds. Market value movements in the investments held for segregated fund holders impact the management fees earned on these funds.

The segregated fund types offered, by percentage of total investments for account of segregated fund holders, were within the following ranges as at December 31, 2019 and 2018:

Type of fund	%
Money market	1 to 5
Fixed income	10 to 15
Balanced	40 to 45
Equity	40 to 45

Money market funds include investments that have a term to maturity of less than one year. Fixed income funds are funds that invest primarily in investment grade fixed income securities and where less than 25% can be invested in diversified equities or high-yield bonds. Balanced funds are a combination of fixed income securities with a larger equity component. The fixed income component is greater than 25% of the portfolio. Equity consists primarily of broad-based diversified funds that invest in a well-diversified mix of Canadian, U.S. or global equities. Other funds in this category include low volatility funds, intermediate volatility funds, and high volatility funds.

22.A Investments for Account of Segregated Fund Holders

The carrying value of investments held for segregated fund holders are as follows:

As at December 31,	2019	2018
Segregated and mutual fund units	\$ 102,071	\$ 89,049
Equity securities	10,565	9,771
Debt securities	3,825	3,448
Cash, cash equivalents and short-term securities	589	711
Investment properties	403	400
Mortgages	21	23
Other assets	146	156
Total assets	\$ 117,620	\$ 103,558
Less: Liabilities arising from investing activities	647	496
Total investments for account of segregated fund holders	\$ 116,973	\$ 103,062

22.B Changes in Insurance Contracts and Investment Contracts for Account of Segregated Fund Holders

Changes in insurance contracts and investment contracts for account of segregated fund holders are as follows:

For the years ended December 31,	Insurance contracts		Investment contracts	
	2019	2018	2019	2018
Balance as at January 1	\$ 96,663	\$ 99,121	\$ 6,399	\$ 7,271
Additions to segregated funds:				
Deposits	11,874	11,468	84	85
Net transfer (to) from general funds	(437)	(308)	–	–
Net realized and unrealized gains (losses)	10,700	(7,123)	844	(658)
Other investment income	4,522	4,576	143	178
Total additions	\$ 26,659	\$ 8,613	\$ 1,071	\$ (395)
Deductions from segregated funds:				
Payments to policyholders and their beneficiaries	11,420	10,224	604	614
Management fees	1,053	1,004	56	57
Taxes and other expenses	371	256	14	–
Foreign exchange rate movements	209	(413)	92	(194)
Total deductions	\$ 13,053	\$ 11,071	\$ 766	\$ 477
Net additions (deductions)	\$ 13,606	\$ (2,458)	\$ 305	\$ (872)
Balance as at December 31	\$ 110,269	\$ 96,663	\$ 6,704	\$ 6,399

23. Commitments, Guarantees and Contingencies

23.A Lease Commitments

We lease offices and certain equipment. These are operating leases with rents charged to operations in the year to which they relate. Total future rental payments for the remainder of these leases total \$1,114. The future rental payments by year of payment are included in the MD&A as described in Note 6.

23.B Contractual Commitments

In the normal course of business, various contractual commitments are outstanding, which are not reflected in our Consolidated Financial Statements. In addition to loan commitments for debt securities and mortgages included in Note 6.A.i, we have equity, investment property, and property and equipment commitments. As at December 31, 2019, we had a total of \$3,583 of contractual commitments outstanding. The expected maturities of these commitments are included in the MD&A as described in Note 6.

23.C Letters of Credit

We issue commercial letters of credit in the normal course of business. As at December 31, 2019, we had credit facilities of \$859 available for the issuance of letters of credit (\$891 as at December 31, 2018), from which a total of \$214 in letters of credit were outstanding (\$227 as at December 31, 2018).

23.D Commission on Release

Commissions on Release (“CORE”) is a program designed to facilitate the transfer of blocks of business between advisors in order to provide ongoing service and advice to our Clients. We facilitate and administer these transactions including payment and collection streams. Under the CORE program, when an eligible advisor releases Clients they are servicing, we are contractually obligated to pay them the associated CORE value, based on a specified formula as stipulated in the advisor contract. The value of the CORE commitment will vary for blocks of business which have not been released by an active advisor. The occurrence of future events that will trigger an advisor to release their block of business and the value of the related CORE commitment at that future release date is difficult to predict. As a result of uncertainty in the timing of the triggering event, we cannot reliably estimate our commitment under the CORE program. Due to the nature of the program, in the normal course of business, the commitment related to the future payment to advisors on release of a block of business would be expected to be matched or partially matched by a corresponding amount related to the receivable on the assignment of blocks of business to new advisors, resulting in an immaterial impact to earnings and liquidity in any reporting period.

23.E Indemnities and Guarantees

In the normal course of our business, we have entered into agreements that include indemnities in favour of third parties, such as confidentiality agreements, engagement letters with advisors and consultants, outsourcing agreements, leasing contracts, trade-mark licensing agreements, underwriting and agency agreements, information technology agreements, distribution agreements, financing agreements, the sale of equity interests, and service agreements. These agreements may require us to compensate the counterparties for damages, losses or costs incurred by the counterparties as a result of breaches in representation, changes in regulations (including tax matters), or as a result of litigation claims or statutory sanctions that may be suffered by the counterparty as a consequence of the transaction. We have also agreed to indemnify our directors and certain of our officers and employees in accordance with our by-laws. These indemnification provisions will vary based upon the nature and terms of the agreements. In many cases, these indemnification provisions do not contain limits on our liability, and the occurrence of contingent events that will trigger payment under these indemnities is difficult to predict. As a result, we cannot estimate our potential liability under these indemnities. We believe that the likelihood of conditions arising that would trigger these indemnities is remote and, historically, we have not made any significant payment under such indemnification provisions. In certain cases, we have recourse against third parties with respect to the aforesaid indemnities, and we also maintain insurance policies that may provide coverage against certain of these claims.

In the normal course of our business, we have entered into purchase and sale agreements that include indemnities in favour of third parties. These agreements may require us to compensate the counterparties for damages, losses, or costs incurred by the counterparties as a result of breaches in representation. As at December 31, 2019, we are not aware of any breaches in representations that would result in any payment required under these indemnities that would have a material impact on our Consolidated Financial Statements.

Guarantees made by us that can be quantified are included in Note 6.A.i.

23.F Guarantees of Sun Life Assurance Preferred Shares and Subordinated Debentures

SLF Inc. has provided a guarantee on the \$150 of 6.30% subordinated debentures due 2028 issued by Sun Life Assurance. Claims under this guarantee will rank equally with all other subordinated indebtedness of SLF Inc. SLF Inc. has also provided a subordinated guarantee of the preferred shares issued by Sun Life Assurance from time to time, other than such preferred shares which are held by SLF Inc. and its affiliates. Sun Life Assurance has no outstanding preferred shares subject to the guarantee. As a result of these guarantees, Sun Life Assurance is entitled to rely on exemptive relief from most continuous disclosure and the certification requirements of Canadian securities laws.

The following tables set forth certain consolidating summary financial information for SLF Inc. and Sun Life Assurance (consolidated):

Results for the years ended	SLF Inc. (unconsolidated)	Sun Life Assurance (consolidated)	Other subsidiaries of SLF Inc. (combined)	Consolidation adjustments	SLF Inc. (consolidated)
December 31, 2019					
Revenue	\$ 213	\$ 33,693	\$ 7,516	\$ (1,743)	\$ 39,679
Shareholders' net income (loss)	\$ 2,713	\$ 1,750	\$ 881	\$ (2,631)	\$ 2,713
December 31, 2018					
Revenue	\$ 361	\$ 22,619	\$ 4,453	\$ (436)	\$ 26,997
Shareholders' net income (loss)	\$ 2,616	\$ 2,036	\$ 382	\$ (2,418)	\$ 2,616

Assets and liabilities as at	SLF Inc. (unconsolidated)	Sun Life Assurance (consolidated)	Other subsidiaries of SLF Inc. (combined)	Consolidation adjustments	SLF Inc. (consolidated)
December 31, 2019					
Invested assets	\$ 23,639	\$ 152,512	\$ 8,552	\$ (23,084)	\$ 161,619
Total other general fund assets	\$ 4,135	\$ 24,000	\$ 11,955	\$ (21,480)	\$ 18,610
Investments for account of segregated fund holders	\$ –	\$ 116,918	\$ 55	\$ –	\$ 116,973
Insurance contract liabilities	\$ –	\$ 131,428	\$ 9,644	\$ (9,888)	\$ 131,184
Investment contract liabilities	\$ –	\$ 3,116	\$ –	\$ –	\$ 3,116
Total other general fund liabilities	\$ 4,376	\$ 23,780	\$ 8,053	\$ (14,788)	\$ 21,421
December 31, 2018					
Invested assets	\$ 24,255	\$ 143,040	\$ 6,991	\$ (22,560)	\$ 151,726
Total other general fund assets	\$ 4,088	\$ 21,958	\$ 10,389	\$ (19,396)	\$ 17,039
Investments for account of segregated fund holders	\$ –	\$ 103,014	\$ 48	\$ –	\$ 103,062
Insurance contract liabilities	\$ –	\$ 122,066	\$ 8,534	\$ (8,677)	\$ 121,923
Investment contract liabilities	\$ –	\$ 3,164	\$ –	\$ –	\$ 3,164
Total other general fund liabilities	\$ 4,636	\$ 21,801	\$ 5,972	\$ (13,301)	\$ 19,108

23.G Legal and Regulatory Proceedings

We are regularly involved in legal actions, both as a defendant and as a plaintiff. Legal actions naming us as a defendant ordinarily involve our activities as a provider of insurance protection and wealth management products, as an investor and investment advisor, and as an employer. In addition, government and regulatory bodies in Canada, the U.S., the UK and Asia, including federal, provincial, and state securities and insurance regulators and government authorities, from time to time, make inquiries and require the production of information or conduct examinations or investigations concerning our compliance with insurance, securities, and other laws.

Provisions for legal proceedings related to insurance contracts, such as for disability and life insurance claims and the cost of litigation, are included in Insurance contract liabilities in our Consolidated Statements of Financial Position. Other provisions are established outside of the Insurance contract liabilities if, in the opinion of management, it is both probable that a payment will be required and a reliable estimate can be made of the amount of the obligation. Management reviews the status of all proceedings on an ongoing basis and exercises judgment in resolving them in such manner as management believes to be in our best interest.

Two class action lawsuits have been filed against Sun Life Assurance in connection with sales practices relating to, and the administration of, individual policies issued by the Metropolitan Life Insurance Company (“MLIC”). These policies were assumed by Clarica when Clarica acquired the bulk of MLIC’s Canadian operations in 1998 and subsequently assumed by Sun Life Assurance as a result of its amalgamation with Clarica. One of the lawsuits (*Fehr et al v Sun Life Assurance Company of Canada*) is issued in Ontario and the other (*Alamwala v Sun Life Assurance Company of Canada*) is in British Columbia. In the *Fehr* action, the motions judge dismissed the plaintiff’s motion for certification in its entirety by way of a two-part decision released on November 12, 2015 and December 7, 2016. The plaintiffs appealed and, in a decision released on September 5, 2018, the Ontario Court of Appeal overturned part of the lower court’s decision and certified certain common issues, including three alleged breach of contract claims related to the policies. The next step in the process is the discovery phase. The other action (*Alamwala v Sun Life Assurance Company of Canada*) has remained largely dormant since it was commenced in 2011 and has not been certified. We will continue to vigorously defend against the claims in these actions. In connection with the acquisition of the Canadian operations of MLIC, MLIC agreed to indemnify Clarica for certain losses, including those incurred relating to the sales of its policies. Should either of the *Fehr* or the *Alamwala* lawsuits result in a loss, Sun Life Assurance will seek recourse against MLIC under that indemnity through arbitration.

Management does not believe that the probable conclusion of any current legal or regulatory matter, either individually or in the aggregate, will have a material adverse effect on the Consolidated Statements of Financial Position or results of operations of the Company.

24. Related Party Transactions

SLF Inc. and its subsidiaries, joint ventures and associates transact business worldwide. All transactions between SLF Inc. and its subsidiaries have been eliminated on consolidation. Transactions with joint ventures and associates, which are also related parties, are disclosed in Note 16. Transactions between the Company and related parties are executed and priced on an arm’s-length basis in a manner similar to transactions with third parties.

24.A Transactions with Key Management Personnel, Remuneration and Other Compensation

Key management personnel refers to the executive team and Board of Directors of SLF Inc. These individuals have the authority and responsibility for planning, directing, and controlling the activities of the Company. The aggregate compensation to the executive team and directors are as follows:

For the years ended December 31,	2019		2018	
	Executive team	Directors	Executive team	Directors
Number of individuals	12	10	12	10
Base salary and annual incentive compensation	\$ 17	\$ –	\$ 18	\$ –
Additional short-term benefits and other	\$ 1	\$ 1	\$ 3	\$ 1
Share-based long-term incentive compensation	\$ 22	\$ 2	\$ 24	\$ 2
Value of pension and post-retirement benefits	\$ 2	\$ –	\$ 2	\$ –

24.B Other Related Party Transactions

We provide investment management services for our pension plans. The services are provided on substantially the same terms as for comparable transactions with third parties. We also hold units of investment funds managed by certain of our joint ventures. The carrying amount of our investment in these funds is included in Note 16.D.

25. Pension Plans and Other Post-Retirement Benefits

We sponsor defined benefit pension plans and defined contribution plans for eligible employees. All of our material defined benefit plans worldwide are closed to new entrants with new hires participating in defined contribution plans. Material defined benefit plans are located in Canada, the U.S., and the UK. The defined benefit pension plans offer benefits based on length of service and final average earnings and certain plans offer some indexation of benefits. The specific features of these plans vary in accordance with the employee group and countries in which employees are located. In addition, we maintain supplementary non-contributory defined benefit pension arrangements for eligible employees, which are primarily for benefits which are in excess of local tax limits. As at December 31, 2014, there are no active members in the UK and the U.S. defined benefit plans continuing to accrue future service benefits. On January 1, 2009, the Canadian defined benefit plans were closed to new employees. Canadian employees hired before January 1, 2009 continue to earn future service benefits in the previous plans, which includes both defined benefit and defined contribution components, while new hires since then are eligible to join a defined contribution plan. In addition, one small defined benefit plan in the Philippines remains open to new hires.

Our funding policy for defined benefit pension plans is to make at least the minimum annual contributions required by regulations in the countries in which the plans are offered. Our UK defined benefit pension scheme is governed by pension trustees. In other countries in which we operate, the defined benefit pension arrangements are governed by local pension committees. Significant plan changes require the approval of the Board of Directors of the sponsoring subsidiary of SLF Inc.

We also established defined contribution plans for eligible employees. Our contributions to these defined contribution pension plans may be subject to certain vesting requirements. Generally, our contributions are a set percentage of employees' annual income and may be a set percentage of employee contributions, up to specified levels.

In addition to our pension plans, in Canada and the U.S., we provide certain post-retirement health care and life insurance benefits to eligible employees and to their dependents upon meeting certain requirements. Eligible retirees may be required to pay a portion of the premiums for these benefits and, in general, deductible amounts and co-insurance percentages apply to benefit payments. These post-retirement benefits are not pre-funded. In Canada, certain post-retirement health care and life insurance benefits are provided for eligible employees who retired before December 31, 2015. Eligible employees in Canada who retire after December 31, 2015 will have access to voluntary retiree-paid health care coverage. In the U.S., certain post-retirement health care and life insurance benefits are provided to eligible retirees. In the U.S., employees who were not age 50 with 10 years of service as of December 31, 2015 only have access to subsidized retiree health care coverage until eligible for Medicare. Eligible existing and future retirees and covered dependents eligible for Medicare receive an annual contribution to a health reimbursement account to be applied against individual coverage and other eligible expenses.

25.A Risks Associated with Employee Defined Benefit Plans

With the closure of the material defined benefit pension and retiree benefit plans to new entrants, the volatility associated with future service accruals for active members has been limited and will decline over time.

The major risks remaining in relation to past service obligations are increases in liabilities due to a decline in discount rates, greater life expectancy than assumed and adverse asset returns. We have significantly de-risked the investments of our material defined benefit pension plans Company-wide by shifting the pension asset mix away from equities and into more fixed income and liability-matching investments. In 2018, the risk in our UK pension plan was reduced through a buy-in insurance contract protecting the majority of pensioner benefits. The target for our material funded defined benefit plans is to minimize volatility in funded status arising from changes in discount rates and exposure to equity markets.

25.B Defined Benefit Pension and Other Post-Retirement Benefit Plans

The following tables set forth the status of the defined benefit pension and other post-retirement benefit plans:

	2019			2018		
	Pension	Other post-retirement	Total	Pension	Other post-retirement	Total
Change in defined benefit obligations:						
Defined benefit obligation, January 1	\$ 3,458	\$ 262	\$ 3,720	\$ 3,661	\$ 268	\$ 3,929
Current service cost	52	5	57	54	5	59
Interest cost	123	10	133	118	9	127
Actuarial losses (gains)	360	20	380	(253)	(11)	(264)
Benefits paid	(158)	(14)	(172)	(180)	(15)	(195)
Curtailed losses (gains)	1	–	1	–	–	–
Plan amendments	–	–	–	(1)	–	(1)
Foreign exchange rate movement	(31)	(4)	(35)	59	6	65
Defined benefit obligation, December 31	\$ 3,805	\$ 279	\$ 4,084	\$ 3,458	\$ 262	\$ 3,720
Change in plan assets:						
Fair value of plan assets, January 1	\$ 3,253	\$ –	\$ 3,253	\$ 3,301	\$ –	\$ 3,301
Administrative expense	(1)	–	(1)	(1)	–	(1)
Interest income on plan assets	115	–	115	105	–	105
Return on plan assets (excluding amounts included in net interest expense)	306	–	306	(156)	–	(156)
Employer contributions	111	14	125	127	15	142
Benefits paid	(158)	(14)	(172)	(180)	(15)	(195)
Foreign exchange rate movement	(30)	–	(30)	57	–	57
Fair value of plan assets, December 31	\$ 3,596	\$ –	\$ 3,596	\$ 3,253	\$ –	\$ 3,253
Amounts recognized on Statement of Financial Position:						
Fair value of plan assets	\$ 3,596	\$ –	\$ 3,596	\$ 3,253	\$ –	\$ 3,253
Defined benefit (obligation)	(3,805)	(279)	(4,084)	(3,458)	(262)	(3,720)
Net recognized (liability) asset, December 31	\$ (209)	\$ (279)	\$ (488)	\$ (205)	\$ (262)	\$ (467)
Components of net benefit expense recognized:						
Current service cost	\$ 52	\$ 5	\$ 57	\$ 54	\$ 5	\$ 59
Administrative expense	1	–	1	1	–	1
Net interest expense (income)	8	10	18	13	9	22
Curtailed losses (gains)	1	–	1	–	–	–
Plan amendments	–	–	–	(1)	–	(1)
Other long-term employee benefit losses (gains)	–	5	5	–	(3)	(3)
Net benefit expense	\$ 62	\$ 20	\$ 82	\$ 67	\$ 11	\$ 78
Remeasurement of net recognized (liability) asset:						
Return on plan assets (excluding amounts included in net interest expense)	\$ 306	\$ –	\$ 306	\$ (156)	\$ –	\$ (156)
Actuarial gains (losses) arising from changes in demographic assumptions	28	1	29	7	(2)	5
Actuarial gains (losses) arising from changes in financial assumptions	(393)	(18)	(411)	241	8	249
Actuarial gains (losses) arising from experience adjustments	5	2	7	5	2	7
Foreign exchange rate movement	2	4	6	(2)	(2)	(4)
Components of defined benefit costs recognized in Other comprehensive income (loss)	\$ (52)	\$ (11)	\$ (63)	\$ 95	\$ 6	\$ 101

25.C Principal Assumptions for Significant Plans

	2019			2018		
	Canada %	UK %	U.S. %	Canada %	UK %	U.S. %
To determine defined benefit obligation at end of year:						
Discount rate for pension plans	3.00	2.00	3.45	3.60	2.85	4.40
Rate of compensation increase	3.00	n/a	n/a	3.00	n/a	n/a
Pension increases	0.00-0.15	2.95	n/a	0.00-0.15	3.15	n/a
To determine net benefit expense for year:						
Discount rate for pension plans	3.60	2.85	4.40	3.40	2.30	3.70
Rate of compensation increase	3.00	n/a	n/a	3.10	n/a	n/a
Pension increases	0.00-0.15	3.15	n/a	0.00-0.15	3.50	n/a
Health care trend rates:						
Initial health care trend rate	5.36	n/a	6.50	5.42	n/a	6.50
Ultimate health care trend rate	4.50	n/a	5.00	4.50	n/a	5.00
Year ultimate health care trend rate reached	2030	n/a	2025	2030	n/a	2023

	2019			2018		
	Canada	UK	U.S.	Canada	UK	U.S.
Mortality rates:						
Life expectancy (in years) for individuals currently at age 65:						
Male	23	23	22	23	24	23
Female	25	24	24	25	25	24
Life expectancy (in years) at 65 for individuals currently at age 45:						
Male	24	25	24	24	25	24
Female	26	27	25	26	28	26
Average duration (in years) of pension obligation	16.7	16.6	13.4	17.3	16.9	12.2

Discount Rate, Rate of Compensation Increase and Health Care Cost

The major economic assumptions which are used in determining the actuarial present value of the accrued benefit obligations vary by country.

The discount rate assumption used for material plans is determined by reference to the market yields, as of December 31, of high-quality corporate bonds that have terms to maturity approximating the terms of the related obligation. In countries where a deep corporate market does not exist, government bonds are used. Compensation and health care trend assumptions are based on expected long-term trend assumptions which may differ from actual results.

25.D Sensitivity of Key Assumptions

The following table provides the potential impact of changes in key assumptions on the defined benefit obligation for pension and other post-retirement benefit plans as at December 31, 2019. These sensitivities are hypothetical and should be used with caution. The impact of changes in each key assumption may result in greater than proportional changes in sensitivities.

	Pension	Post-retirement benefits
Interest/discount rate sensitivity: ⁽¹⁾		
1% decrease	\$ 690	\$ 36
1% increase	\$ (537)	\$ (30)
Rate of compensation increase assumption:		
1% decrease	\$ (78)	n/a
1% increase	\$ 81	n/a
Health care trend rate assumption:		
1% decrease	n/a	\$ (14)
1% increase	n/a	\$ 17
Mortality rates: ⁽²⁾		
10% decrease	\$ 99	\$ 7

(1) Represents a parallel shift in interest rates across the entire yield curve, resulting in a change in the discount rate assumption.

(2) Represents 10% decrease in mortality rates at each age.

25.E Fair Value of Plan Assets

Composition of fair value of plan assets, December 31:

	2019	2018
Equity investments	3%	3%
Fixed income investments	77%	76%
Real estate investments	7%	8%
Qualifying insurance contract	8%	9%
Other	5%	4%
Total composition of fair value of plan assets	100%	100%

The fair value of our equity investments in 2019 and 2018 are consistent with Level 1 or Level 2 fair value hierarchy. In 2019, 3% of our fixed income investments (2% in 2018) are determined based on valuation techniques consistent with Level 1 of the fair value hierarchy.

The assets of the defined benefit pension plans are primarily held in trust for plan members, and are managed within the provisions of each plan's investment policies and procedures. Diversification of the investments is used to limit credit, market, and foreign currency risks. We have significantly de-risked the investments of our material defined benefit pension plans by shifting the pension asset mix away from equities and into more fixed income and liability-matching investments. In 2018, the risk in our UK pension plan was reduced through a buy-in insurance contract, protecting the majority of pensioner benefits. The long-term investment objectives of the defined benefit pension plans are to equal or exceed the rate of growth of the liabilities. Over shorter periods, the objective of the defined benefit pension plan investment strategy is to minimize volatility in the funded status. Liquidity is managed with consideration to the cash flow requirements of the liabilities.

25.F Future Cash Flows

The following tables set forth the expected contributions and expected future benefit payments of the defined benefit pension and other post-retirement benefit plans:

	Pension	Post-retirement	Total
Expected contributions for the next 12 months	\$ 84	\$ 16	\$ 100

Expected Future Benefit Payments

	2020	2021	2022	2023	2024	2025 to 2029
Pension	\$ 149	\$ 155	\$ 159	\$ 167	\$ 170	\$ 924
Post-retirement	16	16	17	17	17	93
Total	\$ 165	\$ 171	\$ 176	\$ 184	\$ 187	\$ 1,017

25.G Defined Contribution Plans

We expensed \$131 in 2019 (\$120 for 2018) with respect to defined contribution plans.

26. Earnings (Loss) Per Share

Details of the calculation of the net income (loss) and the weighted average number of shares used in the earnings per share computations are as follows:

For the years ended December 31,	2019	2018
Common shareholders' net income (loss) for basic earnings per share	\$ 2,618	\$ 2,522
Add: Increase in income due to convertible instruments ⁽¹⁾	10	10
Common shareholders' net income (loss) on a diluted basis	\$ 2,628	\$ 2,532
Weighted average number of common shares outstanding for basic earnings per share (in millions)	592	606
Add: Dilutive impact of stock options ⁽²⁾ (in millions)	1	1
Add: Dilutive impact of convertible instruments ⁽¹⁾ (in millions)	4	4
Weighted average number of common shares outstanding on a diluted basis (in millions)	597	611
Basic earnings (loss) per share	\$ 4.42	\$ 4.16
Diluted earnings (loss) per share	\$ 4.40	\$ 4.14

(1) The convertible instruments are the SLEECs B issued by SL Capital Trusts.

(2) Excludes the impact of 1 million stock options for the year ended December 31, 2019 (1 million for the year ended December 31, 2018) because these stock options were anti-dilutive for the period.

27. Accumulated Other Comprehensive Income (Loss)

Changes in accumulated other comprehensive income (loss), net of taxes, are as follows:

For the years ended December 31,	2019		2018			
	Balance, beginning of period	Other comprehensive income (loss)	Balance, end of period	Balance, beginning of period	Other comprehensive income (loss)	Balance, end of period
Items that may be reclassified subsequently to income:						
Unrealized foreign currency translation gains (losses), net of hedging activities	\$ 1,923	\$ (564)	\$ 1,359	\$ 1,012	\$ 911	\$ 1,923
Unrealized gains (losses) on available-for-sale assets	(56)	369	313	346	(402)	(56)
Unrealized gains (losses) on cash flow hedges	(21)	14	(7)	(11)	(10)	(21)
Share of other comprehensive income (loss) in joint ventures and associates	(24)	(9)	(33)	(31)	7	(24)
Items that will not be reclassified subsequently to income:						
Remeasurement of defined benefit plans	(263)	(42)	(305)	(347)	84	(263)
Revaluation surplus on transfers to investment properties	145	–	145	145	–	145
Total	\$ 1,704	\$ (232)	\$ 1,472	\$ 1,114	\$ 590	\$ 1,704
Total attributable to:						
Participating policyholders	\$ 14	\$ (3)	\$ 11	\$ 9	\$ 5	\$ 14
Shareholders	1,690	(229)	1,461	1,105	585	1,690
Total	\$ 1,704	\$ (232)	\$ 1,472	\$ 1,114	\$ 590	\$ 1,704